

AMERICAN ARTISAN and Hardware Record

Vol. 80. No. 18.

620 SOUTH MICHIGAN AVENUE, CHICAGO, OCTOBER 30, 1920.

\$2.00 Per Year.

GENERAL LIBRARY
NOV 1-1920
UNIV. OF MICH.



FOR over thirty years dealers in all parts of the country have been building up successful warm air heating businesses with

SCHEIBLE WARM AIR HEATERS

This fact is due to the unusually good performance and service that these heaters give to the users. They not only possess superior time-tried features, but their all-around goodness and soundness of construction is always so persistently dominant that both dealers and users never doubt their genuine quality.

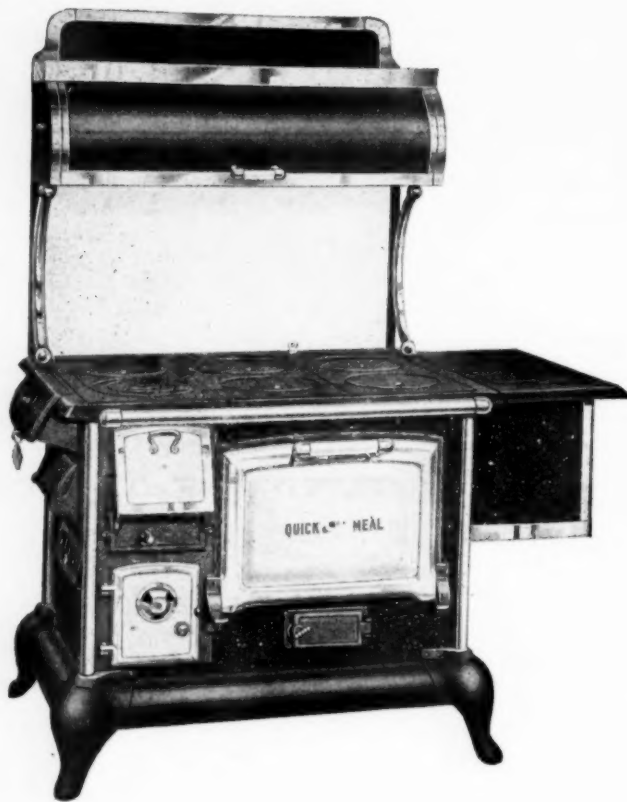
Our agency for your territory ought to bring you good business and big profits.

*Let us send you our latest catalog
together with full agency details.*

SCHEIBLE-MONCRIEF HEATER CO.

1444 West Ninth Street

CLEVELAND, OHIO



QUICK MEAL

Blue, Black or White
Porcelain Enameled
Coal Ranges

are the most up-to-date
ranges made.

They will last a lifetime.

Place your orders now.

Quick Meal Stove Co.

Division of American Stove Co.

825 Chouteau Avenue

St. Louis, Mo.



Rush Orders

need prompt attention and
we have two buildings full of
Furnaces and **Furnace Sup-
plies** to take care of your
rush orders during the busy
season.

And, Mr. Dealer, you will be
able to handle *more jobs*
in *less time* if you install

**NESBIT, WEIR or
PEERLESS-GRAVITY**

(single register) **Furnaces,
HANDY Furnace Pipe and
ROCK ISLAND Registers.**

"The Standard People" Sell "Standard Goods"

Our Complete Line of Catalogues Are Yours on Request

STANDARD FURNACE & SUPPLY CO.

407-13 South 10th Street

OMAHA, NEBRASKA

FOUNDED 1880
BY
DANIEL STERN
Thoroughly Covers
The Hardware, Stove,
Sheet Metal, and Warm
Air Heating and Venti-
lating Interests

AMERICAN ARTISAN and Hardware Record

Address all communications and
remittances to
AMERICAN ARTISAN
AND
HARDWARE RECORD
620 South Michigan Avenue
Chicago, Illinois

PUBLISHED EVERY SATURDAY BY ESTATE OF DANIEL STERN

TERMS OF SUBSCRIPTION IN THE UNITED STATES AND ITS POSSESSIONS (Invariably in Advance) ONE YEAR POSTAGE PAID \$2.00
FOREIGN COUNTRIES ONE YEAR POSTAGE PAID \$4.00 CANADA ONE YEAR POSTAGE PAID \$3.00

Entered as Second-Class Matter June 25 1885 at the Post Office at Chicago, Illinois under Act of March 3rd 1879

Vol. 80. No. 18.

CHICAGO, OCTOBER 30, 1920.

\$2.00 Per Year.

One of the subjects discussed the past week at the convention of the National Hardware Association in Atlantic City, New Jersey, was **The Abuse of Sales Terms.** the prevalence of the abuse of sales terms. If words have an accepted meaning in business, it ought not to be difficult to come to an agreement for the keeping of one's promises.

Nearly every purchaser, manufacturer, salesman and jobber in this country will bear testimony to the fact that his open-account customers abuse the terms on which they make their purchases.

And surely all these will agree that their individual interests and the business and financial conditions of the country in general would be vastly improved if sales terms could on the whole be narrowed down so that those who do not buy for spot cash or on cash discount basis would pay punctually at the end of their credit periods.

We are strongly convinced that the only method by which this can be effected is through the general use of the trade acceptance.

We believe that the reason why the trade acceptance is not already in general use is that many who would like to sell on a trade acceptance basis fear the competitive force of easier sales terms which their competitors might persist in using.

At the same time, there is a constantly accumulating mass of evidence that those concerns which make intelligent and patient effort to incorporate the trade acceptance in their sales terms are almost without exception successful, and find the results so satisfactory that they would not return to the old system.

Trade acceptance method is so much of an improvement over the open account that we believe in some cases sellers, at present

sacrificing very heavy cash discounts for the purpose of avoiding the dangers and inconveniences of open accounts, would find it to their advantage to consider the economy involved in the use of trade acceptances when dealing with customers of strong credit.

Definite steps should be taken to do away with the notorious abuse of sales terms, particularly as regards open accounts, and we believe that the most practical course is through restricting sales terms to the cash discount and to the trade acceptance.

♦ ♦ ♦ ♦ ♦

There is probably no other item on the market today which is so well known as Ivory Soap.

A Change of Front.

The manufacturers of this every-day necessity have for years been heavy buyers of "consumer publicity," and have during these years spent practically nothing in the publications from which the distributors of Ivory Soap secure their information as to market conditions, improved selling methods and better conduct of their stores in general.

While these manufacturers did not use the expression which has been charged to the makers of a certain food product—"The retailer can go to ——— for all we care; he has to carry our line whether there is any profit in it for him or not"—their attitude appeared to be the same. They "created" a demand, and the retailer had to buy their goods or lose many sales.

But Procter and Gamble have come to realize that there was a certain something lacking in their selling campaign, and that this something could be supplied only by making a liberal use of advertising space in the trade papers that cover their field—and so they have contracted for full page advertisements in the leading grocery trade publications, the series to run for twelve months as a starter.

When it comes to a real show-down, the manufacturer who isn't so blind to his own interests that he will not let himself be convinced by cold, clear facts, has to admit to himself—if to no one else—that in order to make certain of the maximum returns on his money paid out for selling costs, he must appropriate and use a certain percentage of that selling cost for a properly planned advertising campaign in such trade publications as reach the class of retailers through whom his product must reach the consumer.

American Artisan and Hardware Record has for years been considered—and is so considered today—as one of the best edited and most progressive publications in its field.

Its circulation is national in scope and especially strong in the central and western states.

The character of its editorial matter is of the highest—with exceptionally well written and instructive leading articles and editorials.

The various departments, such as selling helps for the retailer of hardware stores and kindred lines; window displays; advertising hints; helps for the worker with tools; practical suggestions for the installer of heating and ventilating apparatus, are conducted by men who know their subject.

Its notes on market conditions are regarded as authoritative, and only in American Artisan and Hardware Record can be found a weekly revised list of price quotations covering the entire field. No other hardware publication furnishes this important service to retailers.

It is small wonder, therefore, that many manufacturers of articles that are sold in hardware and housefurnishings stores have for years been regular, consistent advertisers in American Artisan and Hardware Record, and that numerous manufacturers of tools and supplies used in sheet metal shops and by installers of warm air heating apparatus have found the advertising columns of American Artisan and Hardware Record so valuable an adjunct to their selling campaigns that they renew their contracts from year to year, in many cases without solicitation.

Service is the only basis upon which any institution or organization can be established and maintained.

American Artisan and Hardware Record has for forty years rendered useful and high-

ly efficient service to its subscribers, and as a result of this service has built up a circulation among progressive hardware dealers and sheet metal contractors in all lines, which no progressive manufacturer can afford to ignore in planning his selling and advertising campaigns, for these subscribers have great buying power, high credit standing and staunch loyalty toward the publication which is helping them to make their business more prosperous.

◆ ◆ ◆ ◆ ◆

Look into your credit files. There is money in them. Get it out and use it for your business. There are

Get Money many good forms of collec-
Due to You. tion letters. Study such let-
ters closely. Pick out the let-

ter or set of letters which best suits your type of mind. Then go after the creditors whose names have been the longest on your books. Don't stop till you get the money. You will be agreeably surprised to find that figuratively speaking, you never expected to a lot of good United States dollars which, see again, will return to your cash drawer.

◆ ◆ ◆ ◆ ◆

You can lift a ton on a fulcrum an inch wide. Little things are often the pivot of great circumstances. Fre-

Place Goods frequently, observations of small
to the Right details lead to big results. We
know, for example, that most

people are right-handed. Usually they turn to the right in entering the store. The less friction there is in matching goods with desire the easier it is to sell them. Therefore, it is worth while to put most profitable articles on the right side of your store.

◆ ◆ ◆ ◆ ◆

When selling high grade goods, it is wise to talk quality as the reason for the price which you charge. In other

Price of words, you should try to estab-
Quality. lish in the mind of your cus-
tomer a balance of value and

price. Here is an illustration which you might find useful now and then:

Ordinary sugar sells for a price below thirty cents a pound. "Dulcitol," which is a rare bacteriologic sugar, sells for three hundred and seventy-five dollars a pound. The difference in these prices is a difference of quality—the quality of rareness.

Random Notes and Sketches

By Sidney Arnold

I enjoyed a pleasant visit this week with George D. Kirkham, of the American Steel and Wire Company.

George is one of the old standbys in the hardware trade and is one of the prominent members of the Old Guard Southern Hardware Salesmen. He knows the business from beginning to end and his customers know that what he tells them about trade conditions is in accordance with the facts, so when he says "Buy," they sign on the dotted line.

* * *

The world's center of happiness has been shifted, for the time being, to Maple Grove Resort, State Line, Wisconsin.

Charles E. Glessner, Sales Manager and Secretary, Excelsior Steel Furnace Company, Chicago, Illinois, is sojourning in that delightful locality with his lovely bride, formerly Miss Helen Lucile Emery.

They were married at the bride's home Wednesday, October 20th.

It was a beautiful wedding—tranquil, joyous, and free from the well-meant buffoonery and practical jokes which usually mar

similar delightful occasions.

The happy couple will be at home November 15 at 8022 South Peoria Street, Chicago, Illinois.

* * *

Emotions are very powerful in their effect upon judgment, says my friend, William Covert of Schill Brothers Company, Crestline, Ohio.

He makes his meaning clear with this story:

Magistrate (severely)—"Horsewhipping is the only suitable punishment for you and your kind. The idea of a man of your size beating a poor, weak woman like that."

Prisoner—"But, your worship, she was irritating me."

Magistrate—"How does she irritate you?"

Prisoner—"Why, she keeps saying: 'Hit me, beat me, I dare you to hit me; just hit me once, and I'll have you hauled up before that baldheaded old reprobate judge and see what he'll do with you.'"

Magistrate (chokingly)—"Discharged."

* * *

My friend Arthur Brisbane, who writes editorials and dusts the desks in the Hearst publication offices, has a habit of putting punch in his preachments which somehow or other makes the idea sink in.

Here is a good one, as a sample.

You might cut it out and paste it up somewhere so that you and everybody else will get a glance at it every day.

Maybe it will help somebody to take a tumble to himself:

"The most dangerous folly in America is the idea of many workers that when they do a half day's work

they cheat the employers and help fellow workmen to a job. They cheat themselves, putting up the high cost of living and preparing a day of reckoning. We shall not see fifteen million men idle at one time, but we shall see a good many hungry, and many bread lines formed unless the day, once more, produces a day's work. And the workers, not the employers, will be in the breadlines.

"The women of the country should impress upon their sons, husbands and brothers, one fact that men ignore. One workman for a day's pay gets only what another workman produces. Cut the day's production in two and you cut your own pay in two in the long run"

* * *

Acknowledgment is gladly made to my friend, Fred Biffar, the sporting goods man of Chicago, Illinois, for the subjoined story:

There was an old fellow down in north Alabama and out in the mountains; he kept his jug in the hole of a log.

He would go down at sundown to take a swig of mountain dew—mountain dew that had never been humiliated by a revenue officer nor insulted by a green stamp.

He drank that liquid concoction that came fresh from the heart of the corn, and he glowed.

One evening while he was letting the good liquor trickle down his throat he felt something touch his foot.

He looked down and saw a big rattlesnake coiled ready to strike.

The old fellow took another swig of the corn, and in defiance he swept that snake with his eyes.

"Strike, dern you, strike, you will never find me better prepared."

* * *

You weaken your power of accomplishment when you do not give the best that you have got.

Strength comes from effort.

Muscles grow flabby from disuse.

Vigor of character is not attainable except by putting forth every unit of talent and skill which we possess.

To do justice to yourself is the best way to develop yourself.

That is why there is a vital truth in the subjoined lines of Douglas Malloch:

Give Them the Best You Have Got.

Sure, they will scoff at your scheming,
Sure, they will question your plan,
Sure, they will laugh at your dreaming—
So ev'ry dreamer began.
Ask of the fellows who do things,
Ask of the fellows who won:
What thought the world of the new things,
Things that had never been done?
Dream for them, scheme for them, labor,
Whether they want it or not;
Chisel, or pencil, or sabre—
Give them the best you have got!

Though the whole office refuses,
Though you are scorned by the host,
You are the fellow who loses
When you do less than the most.
Stop not for sulking or sorrow,
Keep at the thing you are at—
Doing your best, that tomorrow
You may do better than that.
If to your goal you are going,
It does not matter a lot;
Still you are gaining and growing—
Give them the best you have got.

Up-to-the-Minute News Siftings

*Items of Interest to Dealers Gleaned from Many Fields.
National and Local Business Plans, Problems, and Practices.*

USES HONOR ROLL TO BOOST HIS STOVE SALES.

Wenatchee, Washington, is a city of about 6,500 inhabitants, but Wells & Wade have built up a retail hardware and stove business there amounting to over one million dollars a year, and are still growing.

Credit is given for much of this almost marvelous growth to Bard L. Stewart and Archie Broderick, who are manager and "star" salesman respectively of the hardware and stove departments.

"Bard's" ability as a salesman is second only to his ability to organize a selling force and "Archie" knows the answer to "Why is a Stove?" better than the man who makes them.

Incidentally, it may be mentioned that when the stove selling season opens—which in the case of this progressive store means as soon as the new stoves commence to arrive—a roster or "Honor Roll" is hung on a large spring roller from the ceiling in the front part of the store, and the name of every person who purchases a stove is listed on this roll which also shows the date of purchase, and style of range or stove.

Mr. Stewart states that this Roll of Honor makes sales at least fifty per cent easier, because people are all more or less imitators and like to be "with the crowd."

"By following up all our sales we remedy such troubles and prevent the customer getting discontented with his stove. A satisfied customer is the best ad that we know of.

"Word of mouth advertising is the most powerful method of advertising known. Therefore, we believe no dealer can afford to neglect his customer after the sale, if for no other reason than that it very greatly lessens the effectiveness of his newspaper or other advertising.

"A complaint should be welcomed for the opportunity it presents of building business."

Mail Order House Sends Wrong Stove to Customer.

The following copy of a letter which appeared on the editorial page of the *Chicago Tribune* of October 27th, contains a good pointer for stove salesmen in retail hardware stores. The letter is from one of the Chicago mail order houses and is in answer to a complaint from a customer:

"Dear Madam: We are surely sorry for our mistake in shipping a stove the wrong size. With reference to the bottom of the stove as shown on the repair chart. Our reason for showing main bottom separate from the upper bottom is that the main bottom could not be shown for repair purposes unless it was shown detached from the upper bottom. You understand the bottom flange of the upper bottom entirely covers the

main bottom. We are confident on examining the stove you will find that the main bottom is in place. Trusting everything is satisfactory, etc."

There doesn't seem to be any offer to rectify the "mistake" in shipping the wrong size. One wonders if the mail order house shipped a bigger and more expensive stove than was ordered.

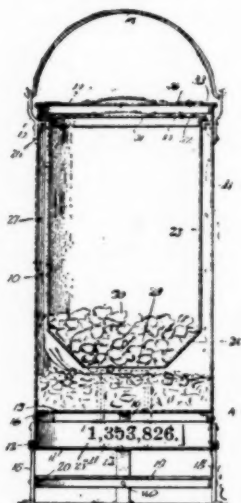
H. Livingston Cole and Bride to Visit Hawaiian Islands.

Congratulations are being extended by the many friends of H. Livingston Cole, son of H. A. Cole, President of Cole Manufacturing Company, Chicago, upon his marriage to Miss Margaret Helen Bickerton which was solemnized recently.

The young couple are on their way to the Hawaiian Islands where they will spend a portion of their honeymoon. After their return, they will live at 7142 Ridgeland Avenue, Chicago.

Gets United States Patent Rights for a Stove.

Under number 1,353,826, United States patent rights have been granted to Charles C. Foster, Chicago, Illinois, for a stove described herewith:



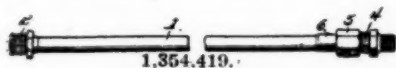
A portable stove of the character described embodying an outer casing having a closed bottom, brackets arranged within the casing near the top thereof, a fuel hopper, said hopper being of a diameter considerably smaller than the internal diameter of the casing and having an open and contracted bottom, a circumferential flange extending about the hopper at the top thereof, said flange being adapted to rest upon the said brackets to suspend the hopper within the casing, and said

brackets also serving to hold the hopper spaced from the casing wall to form therewith a flue around the hopper, a grate disposed below and spaced from the hopper, said grate extending entirely across the outer casing and flue, a closure for the outer casing, there being an opening in the outer casing below the grate, guides on opposite sides of the opening, a closure for the opening and movable in the guides, there being a draft opening through the first recited closure and with which opening the said flue has communication, there being a draft opening with which the hopper has communication, a closure for each of the last said openings, supports for holding the bottom of the casing elevated

above the bottom of the floor, and a shield secured to the supports and spaced below the bottom of the casing and above the floor.

Patents Flexible Tube Connection for Stoves.

Harvey B. Reppetto, Wheeling, West Virginia, assignor to The Wheeling Stove and Range Company, Wheeling, West Virginia, a Corporation of West Virginia, has procured United States patent rights, under number 1,354,419, for a flexible tube connection for stoves and the like described in the following:



As a new article of manufacture, a flexible metal tube

connection for stoves and the like, comprising a soft-metal tube having one end flared to form a bell, a band of relatively harder metal rigidly carried in embracing relation to said end of said tube behind said bell and having its outer end shaped to form a shoulder which conformably seats against said bell for reinforcing the latter, a nipple having one end adapted for seating against the interior face of said bell and carrying screw threads, and a coupling sleeve slidably mounted on said reinforced end and having an internal flange adapted for assuming seated relation to the shoulder of said band, said sleeve also having threads for engagement with those of said nipple.

Conditional Sale Contracts on Stoves Must Be Recorded.

Many retail hardware dealers sell stoves and other large items on what is usually termed "conditional sale contracts," or "easy payments," giving the buyer immediate possession of the article sold, the title remaining with the seller until payment in full has been made.

Sometimes a customer, either through dishonest motives or ignorance, will sell an article bought by himself under such conditional sale contract. In doing so he violates his contract with the dealer, but can the dealer still recover the property which then is in possession of a third party?

In many states, the dealer cannot, under the law, recover possession from a third party (the so-called innocent purchaser), unless he has filed or recorded the conditional sale contract, such as for instance in New York State where an amendment was passed during the recent session of the legislature to the Lien and Contract Act, as follows:

"Such contract is void as against subsequent purchasers, pledgees or mortgagees in good faith for value, and without actual knowledge of the conditions of such contract, and as to them the sale shall be deemed absolute, unless such contract of sale or a true copy thereof be filed as directed in this article and unless the other provisions of the lien law applicable to such contracts are duly complied with."

If the article sold is to be attached to a building (like a warm-air heater, for example), the same provisions apply and in addition a clear description of the building by street number or other identification mark must appear in the papers, and such contract

must be filed with the proper city or village officer before the date of delivery of the goods to the building.

To safeguard your interests on all property sold under conditional sale contracts, file your contracts.

For the benefit of retail hardware dealers who use conditional sale contracts only occasionally and not in sufficient number to warrant having them printed specially, the New York State Retail Hardware Association has had a supply properly worded and of convenient size printed on heavy ledger paper.

Secretary John B. Foley, 607 City Bank Building, Syracuse, New York, will furnish these blanks on request, upon payment of a small fee to cover expenses.

Leaves His Family a Treasure of Happy Memories.

The most precious heritage which a father can leave to his family are happy memories.

This thought is the consolation which sustains the wife and children of Harris Cohn who departed this life Wednesday, October 20, 1920, at his residence 5958 South Park Avenue, Chicago, Illinois.

He was the father of Miss Etta Cohn, Manager AMERICAN ARTISAN AND HARDWARE RECORD. He is survived by his wife, eight daughters, and three sons.

His life was devoted to the daily practice of the highest ideals and to the rearing of his family in full harmony with those ideals.

Although he lived a long life, he never lost the spirit of boyhood.

He was blithe and cheerful in all circumstances. No one could remain long in his presence without experiencing the buoyant optimism of his character.

He would have no one mourning his passing.

The wish nearest his heart always was that his people should think of the pleasant things; of the serene evenings; of the quiet humor with which he invested the petty annoyances of existence; and of the untroubled smile with which he greeted every problem.

All these are positive treasures. They enrich those whom he left behind.

William Henry Borden, Stove Salesman, Passes Away.

Hundreds of persons throughout the stove trade will be saddened by the news of the death of William Henry Borden, which occurred October 22nd at his home in Woodbury, New Jersey.

For thirty-eight years he was active in the trade as salesman for F. M. Borden and Brother and the Borden Stove Company, Philadelphia, Pennsylvania.

His keen knowledge of marketing conditions and requirements, together with his pleasing personality and spirit of helpfulness, endeared him to hosts of friends and patrons.

At the time of his passing away, he was 66 years of age.

He is survived by his wife and three children and by his brothers, F. M. and Josiah B. Borden.

He was buried, October 26th, from his late residence, 313 Glover street, Woodbury, New Jersey.

The Week's Hardware Record

*What Retailers, Jobbers, and Manufacturers Are Doing.
Latest Selling Methods. Experiences of Successful Men.*

SEES NO LIKELIHOOD OF LOWER PRICES FOR CUTLERY.

Speaking of the cutlery situation at the convention of the National Hardware Association last week in Atlantic City, New Jersey, Charles F. Rockwell, of the Miller Brothers Cutlery Company, Meriden, Connecticut, declared that there is no immediate likelihood of price recession in the cutlery market. His review of the situation is as follows:

Production as a whole, with the exception of razors, is not greatly in excess of the pre-war maximum. Considerable additions to plants and equipment have been made, but the acute scarcity of labor has up to this time prevented full utilization thereof.

With increased opportunity for more discriminating selection of labor and the fuller employment of the added facilities above referred to, production will increase, but gradually, for the creation of competent cutlery labor is a matter of time.

Importations of foreign made knives have naturally increased during the year, but the character and volume of the same are not such as to be an influencing factor at present, nor will they be for some time to come.

Such cutlery as has been imported has not been of recent manufacture, nor of a grade that would appeal to domestic buyers. In fact, much of this merchandise was collected promiscuously by American speculators and brought to this country in the hope of a quick turnover.

Conditions in the manufacturing centers of Europe are chaotic; prices for standard goods high, and the fluctuation in foreign exchange makes all purchases speculative.

Some cancellations or requests for deferred shipments have been received during the past month, very largely from the south.

Deducting these, factories generally throughout the industry report orders in hand sufficient to absorb their capacity for from four to six months. So consistently has the demand exceeded the supply for the past four years that factory stocks are negligible.

Responses to circular letters to the trade, requesting information as to specific classes of goods most required, indicate there is little choice; that all lines are needed; stocks exhausted and sales prospects favorable.

Enormous crops, even if at lower prices, place this country in the most favorable position of any nation in the world.

Nothing in the present manufacturing situation justifies a prediction of lower prices.

Costs since the first of this year have increased from fifteen to twenty per cent, and there is no indica-

tion that present standard of wages, working hours or cost of material may be reduced in the near future.

If the general labor situation becomes such that it is possible for factories considerably to increase the output per capita of those now employed, and gradually to replace at no greater expense less competent help with operatives more skilled, it may be possible to put into effect a revised schedule.

For months, orders have been accepted by many factories only on the basis of prices ruling at time of shipment.

The management of these factories keeps in constant and accurate touch with all developments in the industry and any decline which changed labor conditions might make possible would immediately be reflected in correspondingly reduced prices, and automatically every order thus entered would receive the benefit.

Nor are there indications that prices of raw materials, supplies and fuel will be immediately lessened.

The proportion of material to labor in the final cost of all cutlery articles is relatively so small that prices of such material must substantially decline before reflecting a perceptible decrease in the ultimate cost of

the manufactured article, so long as present rates for labor are maintained.

It is evident that nothing short of a general business panic would make possible any radical reductions in the scale of wages and hours now in effect.

Overhead will be tremendously increased during the next six months by the cost of heat, light and power alone.

When the labor supply will warrant, it is probable that the industry generally will seek to restore extra finishes and to extend a wider selection of varieties. Both will increase manufacturing cost, but are desirable from the trade standpoint.

To sum up, production is still behind demand; wholesale and retail stocks are short; general sales prospects good, and no present indication of price recession.

It would, therefore, seem good judgment that cutlery specifications covering requirements up to July first be promptly placed.

Admittedly, there is a present tendency to "tread water" until election results are known. Business will then improve, or there will be no business.

Either such declines in commodities as are necessary will come in a gradual and well ordered manner, or inevitably the bottom must drop out of everything. Most of us have faith to believe that it will be the former.

It is essential that the jobber have goods in stock, or he will lose orders to manufacturers who now so-

It is worth while to keep in mind the fact that AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western hardware and metal prices corrected weekly. You will find these prices on pages 40 to 45 inclusive.

licit business from the retail trade direct, or to other factories, who through loss of business from the jobber, may be influenced also to seek the retail field.

Hardware Dealers of Southeastern Wisconsin Meet at Racine.

A very successful meeting was held at Racine, Wisconsin, Thursday evening, October 28th, of the Hardware Dealers in the southeastern part of that state.

Large delegations were present from Burlington, Kenosha, Waukesha, Milwaukee and suburbs, with a good representation from the smaller towns, and of course the Racine hardware dealers were out to a man.

Dinner was served 7:30 p. m. at the Elks' Club and after the "inner man" had been satisfied, Herbert P. Sheets, Secretary of the National Retail Hardware Association spoke, urging that the dealers buy to keep their stocks in good shape, with due reference, however, to the market conditions. He emphasized the fact that prices—manufacturers', wholesalers' and retailers'—must be reduced before any considerable cut is made in wages, in the same manner as prices were advanced before a general raise in wages took place.

Mr. Sheets pointed out, that the underlying conditions made it reasonable to expect a quiet resumption of activity in the steel industry, even though just at present things were slow.

Carl Jacobs, of the Associate Hardware and Implement Mutual Insuring Companies, explained some of the questions which most frequently came up in connection with the Compensation Act and how liability matters are handled by the Stevens Point offices. He urged that all members instruct their representatives in the Wisconsin State Legislature to vote for the amendment to the Compensation Act by which the employer will no longer be liable for extra compensation in case of accident to minors in his employ if such minors state that they are past 17 years of age. Under the present law, the burden of proof is upon the employer.

C. G. Gorby, of the Cyclone Fence Company, who served as a Captain of Infantry during the World War spoke next and gave a number of striking illustrations of what progressive methods and aggressive work will do in promoting sales of hardware.

The meeting was then thrown open for general discussion and, as has been the case in all the other group gatherings of the Wisconsin hardware dealers, proved very interesting and brought out many helpful suggestions.

Much credit is due to Assistant Secretary B. Christianson for the successful meeting. He is a live wire and keeps things going.

America Wins Hardware Trade of South Africa.

South Africa imports ordinarily about \$12,000,000 worth of hardware per year, according to a report on the subject prepared by American trade commissioners, Lundquist and Williams, and just published by the Bureau of Foreign and Domestic Commerce of the Department of Commerce.

More than \$2,000,000 worth of this business now come to the United States.

The territory involved includes British South Africa and the neighboring colony of Portuguese East Africa.

Since 1914 the United States has made substantial progress in supplying hardware to this territory, and the bureau's investigators are of the opinion that, with proper care and attention to special requirements, much of the present trade can be retained and new and profitable lines developed.

To aid American manufacturers to maintain and improve their position in this market is the purpose of the report.

It discusses the market for particular lines of hardware, hammers, saws, shovels, cutlery, builders' hardware, cabinet hardware, and, in fact, all the important items generally included in the hardware classification.

It also takes up trade methods and suggestions and refers to a list of the names of hardware importers and dealers in all the principal cities of South Africa.

Chicago Hardware Club Plans Election Night Party.

For the convenience and entertainment of its members and their guests, the Hardware Club of Chicago is planning an election night dinner and dance, to be held in the rooms of the Club, State and Lake Building, Lake and State Streets, Chicago, Tuesday evening, November 2, 1920.

Election returns will be received over a special Western Union wire.

Dinner will be served from 6:00 to 8:30 o'clock that evening and members may invite guests to participate in the dinner and entertainment.

No matter which of the candidates is elected President of the United States, the Hardware Club of Chicago will do him the honor of pledging their allegiance as loyal American citizens.

L. E. Porter Is New Advertising Manager of S. F. Bowser & Company.

L. E. Porter, who has been Detroit resident manager of S. F. Bowser and Company, Fort Wayne, Indiana, manufacturers of tanks for gasoline and other oils, now is located in the company's home office as advertising manager. W. M. Mann succeeds him in Detroit.

Encourage the New Man.

Don't try to discourage a new clerk the first day or week he is with you. It has been the practice in some places to set the "green hand" at the most disagreeable job in the store just to see what kind of stuff was in him. The man who came through serenely and smiling was probably a good man, though not necessarily so.

Many a man who might make good otherwise can be spoiled or discouraged, or given an ill-feeling toward his employer by such treatment.

Start the clerk with the work that will average with this regular routine. Help to encourage him all you can. Then he will think more of you, more of himself, and more of his job.

Good Ideas for Window Display

Practical Lessons from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. How to Get More Passers-By to Come into Your Store.

MAKES GOOD USE OF POSTERS IN WINDOW DISPLAY.

Seldom can the quality of a tool be known solely from its appearance.

In fact, the saying that "appearances are deceitful" is just as true of hardware as it is of any other class of goods.

In other words, the element of chance must be eliminated.

He should have an assurance of quality upon which he can place full reliance without being obliged to test quality after purchase.

This assurance is to be had in the established reputation of nationally advertised brands and trade-marks.

No matter how great might be the temptation to



Exhibit of Philadelphia-Made Hardware, Awarded Honorable Mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. Designed and Arranged by Charles E. McMillan for Crisman Hardware Company, Chattanooga, Tennessee.

Quality is determined by test of use.

But the buyer needs to have some reasonably sure way of knowing in advance of purchase that a hammer or a saw of a certain make or style will be just as good as the first one which he bought and used with satisfaction.

lower quality for the sake of increasing profits, the manufacturers of such brands are well aware of the fact that to do so would amount to commercial suicide.

The reason is plain to any one who pauses long enough to think about it.

Hundreds of thousands of dollars are invested in

advertising for the purpose of building up a trade in the standardized article.

Quality has to be kept up in harmony with this vast expenditure of publicity.

After repeated advertising argument and persuasion, people have been induced to buy the article which is widely advertised.

If, then, the manufacturer lowers the quality after having established a trade for his goods, buyers will be quick to note the decline in quality. Purchases will begin to grow less in number. Adverse criticism will begin to multiply. The volume of sales will decrease.

Eventually, the goods will lose their reputation. The money invested in presenting them to the public and establishing them in the goodwill of the people will be wasted.

No manufacturer, howsoever greedy he may be, is willing to run the risk of such a loss.

Therefore, from purely selfish grounds, if from no higher motive, manufacturers of advertised commodities are under financial compulsion to maintain the standard of their products.

Consequently there is good sense in taking advantage of these facts in the making of a window display, as was done by Chas. E. McMillan, who designed and arranged the window display shown in the accompanying illustration for the Crisman Hardware Company, Chattanooga, Tennessee.

This exhibit of "Philadelphia-Made" hardware makes good use of the established reputation of the tools on exhibit.

It was awarded honorable mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

The designer of this window exhibit deserves praise for the practical manner in which he employs cutouts and posters of the manufacturers.

The names of "Yankee," "Plumb," Disston, "Miller," and "Enterprise" are familiar to mechanics and other shrewd judges of hardware values from one end of the country to the other.

The introduction into the window display of these advertising helps would be less effectual if the designer of the exhibit had not used such good judgment in the arrangement of the articles and the makeup of the whole appearance of the window.

He describes the formation of the display as follows:

"First the walls were covered carefully with white crêpe paper. Then two narrow shelves were attached to the walls.

"The shelves were also neatly covered with the same shade of white crêpe paper as the walls.

"The large sign shown at the top of the window display was suspended from the ceiling across one corner of the window.

"On the top shelf the advertising matter was placed with a view to attracting as much attention as possible.

"Between the posters were placed hand saws at a slant which subtly conveyed the idea of action.

"The floor of the window display was also covered with white crêpe paper; and tools were scattered about in such a way as to give the impression of completeness of assortment."

In this exhibit it will be noticed that appealing con-

trast is brought about by the use of white crêpe paper.

There are just enough shadows in the entire exhibit to enable the observer to differentiate the various tools.

The lighting is, therefore, exceptionally good. Inasmuch as most of our knowledge comes through the eyes, it is important that the window display make a quick and favorable impression upon the eye of the passer-by.

The Crisman Hardware Company is consistent in keeping up window displays of this character. The comfortable daily balance carried by this company in the bank is the best proof that window advertising of this high grade is gainful.

Window Display Competition Is School of Advertising.

It sounds like kindergarten teaching to say that advertising sells goods.

In its simplest form, advertising consists in calling attention to things for sale.

That's what the word "advertising" means.

There are three ways of expressing ideas, namely, by words, spoken or written; by pictures, still or moving; and by an arrangement of actual objects.

Window advertising uses two of these ways, although its chief mode of expression is by means of the objects themselves.

The printed advertisement is usually made up of verbal description and pictures.

An attempt is commonly made to present in some sort of arrangement pictures of the goods to be sold with descriptive wording.

In the window display we have the fundamentals of good advertising.

That is to say, the goods are presented to the eye of the passer-by in the most alluring arrangement.

Now it is a fact of knowledge that the advertisements which bring the biggest results are those in which there is suggestion of action in connection with use of the things advertised.

In the making of a window display, action and use can be strongly suggested—frequently by the advertising posters and cutouts furnished by the manufacturers.

Moreover, the window display can readily combine the presentation of the actual commodities with brief and convincing verbal descriptions in the form of placards.

These three ways of advertising goods have been profitably employed in various window displays which are published from week to week in AMERICAN ARTISAN AND HARDWARE RECORD from the past year's Window Display Competition.

It is well for those who are desirous of improving their merchandising ability to study the reproduction of these window displays from this triple angle of presentation.

The chief purpose of the present Window Display Competition is to teach objective advertising as a means to selling goods.

If experience had taught us that it is sufficient merely to study principles and methods, there would be no need of this contest.

But we are so constituted that we need a stimulus of actual practice in order to do things.

Abstract ideas, pleasantly worded instructions, and moralizings are not as successful in inducing men to better themselves as actual, though friendly, rivalry of effort.

Recognizing the value of emulation and contest, the Window Display Competition offers prizes for the best work to hardware merchants, clerks, and others employed in the hardware and related trades.

You are urged, then, to take part in this competition.

Study closely the photographs of window displays which are appearing from week to week.

Look about you in your own town. Observe the window displays of other merchants outside of hardware lines. Get all the ideas you can on the subject.

Resolve to win one of the prizes. Read the subjoined conditions and rules governing the competition.

You're not limited to one entry in the competition.

You may send photographs and descriptions of as many window displays as you wish between now and the time set for the ending of the contest.

Award of Prizes.

The prizes will be awarded as follows:

First prize, \$50.00 in cash, for the best photograph and description received of window display of hardware or kindred lines;

Second prize, \$25.00 in cash, for the photograph and description second in merit;

Third prize, \$15.00 in cash, for the photograph and description third in order of excellence;

Fourth prize, \$10.00 in cash, for the photograph and description fourth in degree of worthiness.

Conditions of Competition.

The conditions of the competition are as follows:

The photograph must be accompanied by descriptions of how the window displays were arranged and the materials used. The description is important and hence should be adequate. These photographs and descriptions may be sent by mail or express, charges prepaid, and must reach this office not later than February 15, 1921. Address all photographs and descriptions to AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition, 620 South Michigan Avenue, Chicago, Illinois.

Each photograph and description must be signed by a fictitious name or device and the same name or device must be put in a sealed envelope containing the real name and address of the contestant. This sealed envelope is to be enclosed with the photograph. Contestants are permitted to enter as many photographs of displays as they please.

A Competition Committee of three will be appointed. One of them will be an expert window dresser and one an experienced hardware man. This Committee will pass upon the merits of all photographs and descriptions received, without knowing the names or addresses of the senders, and will decide the winners of the Competition.

AMERICAN ARTISAN AND HARDWARE RECORD reserves the right to publish all photographs and descriptions submitted.

Cleverly Exploits the Presidential Campaign in Window Display.

Political partisanship is the most poisonous thing that could be injected into business.

Nevertheless, ninety-nine out of every hundred persons are interested in the presidential campaign.

Some swear by Harding. Others swear at him. Some are zealous in behalf of the entire text of the



"Political Window" of Goldcamp Brothers and Company, Ironton, Ohio.

League of Nations. Others get black in the face and gurgel strange sulphurous sounds at the mention of Article 10.

With the negligible exception of the few who are interested in other presidential candidates, the great majority of the people are centering their attention upon Cox and Harding.

It is, therefore, good psychology to make use of this feverish interest in attracting notice to a window display of glass ovenware as is done by Goldcamp Brothers and Company, hardware dealers, Ironton, Ohio.

The photograph shown herewith gives an idea how cleverly Goldcamp Brothers and Company exploited the presidential campaign without giving the slightest offense to any prospective customer.

The placard in the center of the window exhibit reads as follows: "Pick the Winner. No matter who's the winner we will continue to serve you with the best in hardware—Goldcamp's."

Here is an example of a timely window display which is worthy of imitation.

Never Expects to See Another Panic in America.

George E. Roberts, vice-president National City Bank, in speech at Rockhill, South Carolina, declared he never expects to see another panic because of the banking system in United States which is one of the best in the world.

He cautions against periods of over-expansion and collapse, responsibility for which rests largely on bankers.

He attributes present situation to demand for credit beyond ability of our banking system to supply and declares this is the result of waste of capital and expansion of credit during war.

Three Kentucky Hardware Stores Set an Example of Good Business by Selling Unusual Articles.

The Articles Include Live Minnows in Fishing Season, Tents, Outing Hats and Shoes, Bathing Suits, and Kodaks.

There are a lot of real progressive retail hardware dealers in Louisville, Kentucky. This is proved in many ways, such as, for example, by the excellent



**Sutcliffe's
VACATION
Suggestions**

A Bathing Suit
—all sizes
—all colors
—all styles
—all prices

Kodak
Vacation pictures are mighty interesting. We have a complete line of Kodaks, Cameras and Supplies.

Fishing Tackle
We have a fine stock of rods, reels, lines and other fishing requirements.

Miscellaneous
Tennis Rackets and Balls, Thermos Bottles, Rifles and ammunition, Outing Hats, Shirts and Shoes.

Main Store The Sutcliffe Co. 220 S. 4th St. Louisville, Ky.
Branch Store Sparks Place

Figure 1—Advertises Kodaks, Bathing Suits, Outing Hats, Shirts and Shoes, as well as Regular Hardware Articles. Hardware Company and the Sutcliffe Company.

All of these concerns are noted in Southern Indiana and all of Kentucky as among the leaders in their lines, and it is well to point out that all of them are quick to feature any new item of merit which is placed on the market, thus building up new prestige for their business—and not only that:

They are not afraid of stepping across the imagined border which is supposed to circumscribe and confine the hardware business. If they figure that the addition of a new line will add to their business new customers and profitable trade, they add the line and emphasize it in their window displays and advertising.

Items like bathing suits, outing hats, sporting shoes and kindred articles may not be considered as "proper" for a hardware store, but why should they be deemed any more improper than for example writing paper in a drug store, or cut glass or aluminum dishes in a jewelry shop?

On the other hand, isn't it eminently proper that a hardware store catering to amateur fishermen, tennis players and other sportsmen should be in position to fill all the wants of those people for these sports?

So here we have the Sutcliffe Company which operates two stores on the main retail street of Louisville, Kentucky, offering for sale in advertisement headed "Sutcliffe's Vacation

Suggestions," bathing suits, kodaks, fishing tackles, tennis rackets and balls, thermos bottles, rifles and ammunition, outing hats, shirts and shoes.

The advertisement occupied a space of 6¼ inches, two columns wide in the *Courier-Journal* and is reproduced in the first illustration.

Bathing suits—all sizes, all colors, all styles, all prices: A fairly comprehensive line, isn't it? The writer knows, by the way, that the statement is true, for he visited their store last summer and bought one.

While this is not exactly the camping season, it is well to remember that the progressive hardware store is the logical place for the sale of all sorts of articles that the camper may want and need—tents, folding cots, portable stoves, blankets, lamps, cooking utensils, cutlery, camping clothing—hundreds of various items, which not only carry good profit but also draw new trade to the store that offers them for sale.

In the second illustration which is a reproduction of a two column advertisement, three inches deep, there are two timely suggestions: The sale of live bait and the offer to issue fishing licenses. Coupled with the latter is also the very helpful offer to supply information as to the condition of the various streams near Louisville.

If you were going on a fishing trip over the week end, is there anything that you would appreciate more than authentic information as to where you would be likely to have good fishing? And wouldn't an offer to supply such information be likely to draw you to the store where it could be obtained?

Incidentally, the duck's head in the left hand corner of the advertisement has almost grown to be a trademark for this progressive firm of Bourne & Bond, because it has been used for a great while in their advertising. This duck is generally asking some live question in connection with their stock, and the answer



DID YOU KNOW THAT WE HAVE LIVE MINNOWS ?

For your day's outing and your fishing trip it will be convenient for you to come to our place and get your bait. Minnows—we have a large Minnow Pool with a big assortment of the very choicest Minnows for Bass fishing, and we also have

FISHING WORMS.

For the convenience of Kentuckians we issue Indiana Fishing License, and we have reports on the condition of the various streams adjacent to Louisville. If you want to know

WHEN, WHERE AND HOW
to catch a fish come to see us.

BOURNE & BOND, **317 W. MARKET ST.**
Incorporated.

Figure 2—Selling Live Bait Brings New Trade Into This Progressive Hardware Store.

comes in a steady growth of their business.

The third illustration shows a two column advertisement, nine inches deep, offering an article for sale that ought to be in every household—whether the purchaser be an owner or a renter—for by the use of a fire extinguisher he can almost always put out any fire unless it has gained too much headway.

And yet, it is safe to say that not one hardware store in fifty carries fire extinguishers for sale, even though many of them, no doubt, buy them for protection of their stock.

**Protects Property!
Saves Life!**

**AMERICAN LA FRANCE
FIRE EXTINGUISHERS**

This Alert Fire Extinguisher

Incorporates the very latest developments in the soda and acid type of extinguisher. In the construction of the Alert, strength, durability and safety have been the objectives. The operation of the Alert is infallible. To start the extinguisher is turned bottom up—to stop, the extinguisher is righted. This extinguisher is remarkably effective on fires in highly inflammable materials, such as oil, grease, etc.

SPECIAL INTRODUCTORY PRICE \$15.00





Protect your home, garage, factory or automobile with one or more of these Fire Extinguishers. Saves on Insurance!

The American La France

does not operate by air pressure, it is a positive double acting pump that discharges on both strokes from the first pull till the last drop is expelled from the extinguisher. This permits more rapid action, and produces a stream that will carry from 20 to 40 feet. The La France Extinguisher has 25% more capacity than other extinguishers.

SPECIAL INTRODUCTORY PRICE \$10.00

Both
Phones
City 432
Main 433

HEICK

Hardware Department

302 W. MARKET St.

See 3rd & 4th Sts.

Delivery to
all parts of
city every
day.

Figure 3—Advertises a Real Household Necessity. All Hardware Stores Should Sell Fire Extinguishers.

away and dropping into a pile of straw or hay, with a regular fire department miles away.

It is really a wonder that every retail hardware store in rural districts does not carry a good line of fire extinguishers for sale and go after all the business that should and would come to them through comparatively little effort.

An interesting fact is cited here to emphasize this point: At the immense Supply Depot of the Quartermaster Depot at Jeffersonville, there is a highly efficient fire department, equipped with the very latest mechanical equipment for fighting fire. These "stations" are maintained so that any part of the depot can be reached with this apparatus inside of three minutes after an alarm is turned in. Guards are posted at points of vantage to watch for fire. All the permanent buildings are equipped with automatic sprinklers. And yet, the Government finds it good policy to have placed at short intervals between one another large numbers of fire extinguishers similar to those mentioned in the advertisement.

Surely, if they are considered good for that purpose in cities and towns that maintain fire departments, they ought to be installed in every home—one ore more of them.

And more especially, every farmer should be an excellent prospect for the sale of several of these very useful articles, to be hung in storehouses, barns, stables and residences, for surely there would they be of immense help in cases of small fires which may start from an overturned oil lamp or lantern or from a spark from the chimney, from a match carelessly thrown

Some progressive hardware dealer in every town should go after the fire extinguisher business in his community this fall. He will not only add materially to his sales and profits, but he will render a very useful service to his friends and neighbors, for which they can pay him only in goodwill, for he will cut down a large portion of the fire loss in his section.

Review Conditions of Paint, Oil, and Varnish Trade.

At the convention last week of the National Paint, Oil, and Varnish Association, in St. Louis, Missouri, a review was given of trade conditions by the committee on allied industries.

Referring to lead products, D. H. Greene said:

"The demand for white lead, both dry and in oil; red lead, litharge and orange mineral, also basic lead sulphate, has been unprecedented this year and the capacity of the manufacturers of these products has been taxed to the utmost.

"Great difficulties have been experienced on the part of corrodors in supplying the demand and making deliveries promptly, which, naturally, has caused great annoyance to the trade, not because the capacity of the plants is inadequate—in fact, the actual capacity is much greater than the largest consumption of white lead ever reported, but on account of inability to buy pig lead, due to an actual shortage of this material in the United States, caused by labor troubles and inability to open many mines, owing to the lack of both supplies and labor."

Linseed oil was covered by J. W. Daniels, whose report says in part:

"The Government's estimate, July 1, of acreage for 1920, is 1,706,000 acres, compared with 1,683,000 acres in 1919, and the estimate of yield this year, 14,398,000 bushels, compared with 8,919,000 bushels as the final estimate in 1919.

"We have had a big decline in the price of flaxseed, and compared with the price of other grains seed is now cheap. If we expect the farmers to continue planting flaxseed they should be paid a fair price, or they will stop planting and if we have to go to foreign lands for our supply of seed we will probably pay high prices, just as we have done in the last few years."

S. B. Woodbridge described the situation in the lithopone industry as follows:

"The demand for lithopone has been such as to tax the capacity of the various producers.

"According to the Geological Survey, in 1919 there were produced in this country 80,989 tons of lithopone. There are now approximately ten concerns engaged in the manufacture of lithopone in this country. Two other concerns are largely interested in the manufacture of lithopone for their own interests. It is estimated that if all producers could operate under normal conditions their plant capacity would be approximately 100,000 tons.

"The importation of lithopone in this country during the last year, with one or two exceptions, has been practically nothing. Importations may have been made for the individual accounts of certain consumers and have not put on the market any sufficient quantities of lithopone to relieve the situation."

The outlook as regards zinc oxide is described by E. V. Peters as not likely to cause the paint industry any concern either as to supply or price. He added:

"This market is fairly stable, with producers able to meet the requirements of the trade. During the past few years there has been an increased amount of production, and it is believed that the ore supply is such, especially as far as the leaded grades of zinc oxide are concerned, to enable the producers to supply the industry with their requirements."

Of brushes, George D. Pushee said:

"It would be natural to expect that the rising prices for Chinese bristles would have in a measure stimulated production, yet we are today brought face to face with the American Consul's report that north China bristles will show but 60 per cent of last year's crop. The result of this shortage is that most brush makers (and some that have never before done such a thing) are today selling brushes against bristles bought but not yet shipped, and which may not be shipped out of China in time for this year's business."

The difficulties in connection with the manufacture of window glass have seldom, if ever, been equal to those experienced this year, according to the report of B. J. Cassidy, who says:

"With the start of cold weather last December a fuel shortage in the gas belt caused a falling off of approximately 40 per cent in window glass shipments, owing to factories' inability to complete orders already under way, and a falling off of production variously figured at from 25 to 35 per cent."

"Matters eased up in May somewhat. Railroad strikes apparently failed, congestion at terminals was relieved and material and finished product moved more freely. Warm weather eliminated fuel troubles. May showed 55 per cent increase over April in shipments, or about 75 per cent as much as moved in November."

"The American Window Glass Company, having been out of the market for months, on September 9 reentered the market, agreeing to accept only such business as they can produce and complete with reasonable promptness at former prices and boxing charges."

"The dry color industry has been very prosperous this year," says Marcus M. Marks. "All manufacturers having desirable product have had their facilities taxed to the utmost and some have increased their output by additional machinery. Well known brands are sold ahead for several months at this writing."

Recounts Business Factors of the Present Time.

Unsettled conditions in trade and industry, a rapid and steady fall in wholesale prices of nearly all commodities, a decline in the market values of grain crops and cotton, continuing high money rates and a relative increase in failures are the unfavorable features of the domestic business situation as reported by the "Mid-Month Review" for October, just issued by the Irving National Bank.

"To offset these," the "Review" says, "there are positively reassuring factors, such as the marked betterment of transportation conditions, large final crop yields, a recent influx of immigrants which promises

to restore the balance of man-power in industry and increasing confidence on the part of investors.

"Noteworthy also is the ease with which the final payment of the Anglo-French loan was accomplished at a moment when our own Government financing made extra demands on the market, while the announcement of a weekly production of 12,000,000 tons of bituminous coal and normal conditions again in anthracite assure the country against any fuel shortage and provide a substantial surplus for export needs."

Wickman Screw Works Organized to Manufacture Screw Products.

Under the laws of Pennsylvania, the Wickman Screw Works, 420 Neptune street, West End, Pittsburgh, has been incorporated at \$50,000. It now is manufacturing screws, nuts, bolts, hardware and special screw machine products in its plant. G. G. Stuart, Cleveland, is president; O. C. Zimmerman, E. V. Hays and H. M. Wickersham, Pittsburgh, are vice president, treasurer and secretary, respectively.

Trade Opportunities in Foreign Lands.

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

33873.—A commission house in South Africa desires the agency for agricultural implements and hardware. No references offered.

33921.—A commission house in India invites American manufacturers of hardware to submit catalogues, with terms, quotations, and other pertinent information. Reference.

33924.—An importer in France desires an agency for metal goods, mechanical articles, and automobile accessories. Correspondence should be in French. References.

33926.—A commercial agency in India desires to import various American products such as hardware and building materials; metals in plates and sheets; automobiles and motor cycles, and accessories, etc. References.

33929.—A firm in Sweden desires direct communications with American manufacturers of copper wire, cables, bars, and sheets; brass wire, bars, and sheets; and aluminum sheets. References.

33930.—A manufacturer's representative in Egypt desires to establish trade relations with American manufacturers of paints, hardware, etc.

33933.—A merchant in China desires to purchase heavy and light hardware, locks, tools, and cutlery. Quotations to be given c. i. f. Manchurian port. Payment in 30 to 90 days.

33935.—An agency for automobile tires, and accessories is desired by a firm in France. References.

33944.—A commission house in Mexico is in the market for tinned wire for pins, steel, bronze, or brass; and lightweight tin plate used in connection with mirrors, photo frames, buttons and advertising novelties.

33946.—A firm in Argentina desires to purchase wire, hardware, etc. Quotations to be given c. i. f. Argentine port, with cash price and 30 to 60 day terms. References.

Coming Conventions.

American Washing Machine Manufacturers' Association, Hotel Sherman, Chicago, Illinois, November 10 and 11, 1920. E. B. Seitz, Secretary, 10 South LaSalle Street, Chicago, Illinois.

Automotive Equipment Association, Coliseum, Chicago, Illinois, November 15, 16, 17, 18 and 19, 1920. William M. Webster, Commissioner, 1813-1818 City Hall Square Building, Chicago, Illinois.

Automobile Accessories Branch of the National Hard-

ware Association, Coliseum, St. Louis, Missouri, November 30, December 1, 2, and 3, 1920, headquarters, Hotel Statler. T. James Fernley, Secretary-Treasurer, 505 Arch Street, Philadelphia, Pennsylvania.

Southern Association of Stove Manufacturers, Evansville, Indiana, December 6 and 7, 1920. W. H. Cloud, Secretary, 216 Glendora Avenue, Louisville, Kentucky.

Texas Hardware and Implement Association, Adolphus Hotel, Dallas, Texas, January 18, 19, and 20, 1921. A. M. Cox, Secretary, 1808 Main street, Dallas, Texas.

Western Retail Implement, Vehicle and Hardware Association, Kansas City, January 18, 19 and 20, 1921. H. J. Hodge, Secretary, Abilene, Kansas.

Pacific Northwest Hardware and Implement Association, Seattle, Washington, January 18, 19, 20, and 21, 1921. E. E. Lucas, secretary, Hutton Building, Spokane, Washington.

Missouri Retail Hardware Association, Planters Hotel, St. Louis, Missouri, January 25, 26, and 27, 1921. F. X. Becherer, secretary, 5106 North Broadway, St. Louis, Missouri.

Mountain States Hardware and Implement Association, Brown Palace Hotel, Denver, Colorado, January 25, 26, 27, 1921. W. W. McAllister, Secretary-Treasurer, Boulder, Colorado.

Indiana Retail Hardware Association, January 25, 26, 27 and 28, 1921. (Place to be announced later.) G. F. Sheely, Secretary, Argos, Indiana.

Oregon Retail Hardware and Implement Dealers' Association, Portland, Oregon, January 25, 26, 27, and 28, 1921. E. E. Lucas, secretary, Hutton Building, Spokane, Washington.

Kentucky Hardware and Implement Dealers' Association, Louisville, Kentucky, January 25, 26, 27 and 28, 1921. J. M. Stone, Secretary, Sturgis, Kentucky.

American Society of Heating and Ventilating Engineers, Philadelphia, Pennsylvania, January 26, 27 and 28, 1921. Casin W. Obert, Secretary, 29 West 39th Street, New York City.

West Virginia Retail Hardware Dealers' Association, Huntington, West Virginia, February 1, 2, 3, 1921. James B. Carson, Secretary-Treasurer, Dayton, Ohio.

Nebraska Retail Hardware Association, Hotel Rome, Omaha, Nebraska, February 1, 2, 3 and 4, 1921. George H. Dietz, Secretary, Lincoln, Nebraska.

Wisconsin Retail Hardware Association, Milwaukee, Wisconsin, February 2, 3 and 4, 1921. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Oklahoma Hardware and Implement Association, Oklahoma City, February 8, 9, and 10, 1921. W. B. Porch, secretary-treasurer, Oklahoma City, Oklahoma.

Michigan Retail Hardware Association, Grand Rapids, Michigan, February 8, 9, 10, 11, 1921. Arthur J. Scott, Secretary, Marine City, Michigan.

The Michigan Retail Hardware Association, Grand Rapids, Michigan, February 8, 9, 10, and 11, 1921. Arthur J. Scott, Secretary, Marine City, Michigan.

Iowa Retail Hardware Association, Des Moines, Iowa, February 8, 9, 10, and 11, 1921. A. R. Sale, secretary-treasurer, Mason City, Iowa.

North Dakota Retail Hardware Association, Fargo, North Dakota, February 8, 9, 10, and 11, 1921. C. N. Barnes, Secretary, Grand Forks, North Dakota.

Pennsylvania and Atlantic Seaboard Hardware Association, Incorporated, Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, February 8, 9, 10, 11, 1921. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh.

Illinois Retail Hardware Association, Hotel Sherman, Chicago, Illinois, February 15, 16 and 17, 1921. Leon D. Nish, Secretary, Elgin, Illinois.

California Retail Hardware and Implement Association, San Francisco, California, February 15, 16, and 17, 1921. LeRoy Smith, secretary, 112 Market street, San Francisco, California.

Minnesota Retail Hardware Association, St. Paul Auditorium, St. Paul, Minnesota, February 15, 16, 17, 18, 1921. H. O. Roberts, Secretary, Metropolitan Life Building, Minneapolis, Minnesota.

Ohio Hardware Association, Columbus, Ohio, February 15, 16, 17 and 18, 1921. Hotel Headquarters, Deshler Hotel, Exhibition in Memorial Hall. James B. Carson, Secretary, Dayton, Ohio.

New England Hardware Dealers' Association, Mechanics' Building, Boston, Massachusetts, February 21, 22, and 23, 1921. George A. Fiel, secretary, 10 High street, Boston, Massachusetts.

Michigan Sheet Metal Contractors' Association, Hotel Durant, Flint, Michigan, February 22, 23, and 24, 1921. F. E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

New York State Retail Hardware Association, Rochester, New York, February 22, 23, 24, and 25, 1921. John B. Foley, Secretary, 607 City Bank Building, Syracuse, New York.

South Dakota Retail Hardware Association, Sioux Falls, South Dakota, February 22, 23, 24, 25, 1921. H. O. Roberts, Secretary, Metropolitan Life Building, Minneapolis, Minnesota.

Panhandle Hardware and Implement Association, Am-

arillo, Texas, May 8, 9, and 10, 1921. Troy Thompson, Secretary, Treasurer, Dalhart, Texas.

Hardware Association of the Carolinas, Charlotte, North Carolina, May 10, 11, 12, and 13, 1921. T. W. Dixon, secretary-treasurer, Charlotte, North Carolina.

Southeastern Retail Hardware and Implement Association (composed of Alabama, Florida, Georgia and Tennessee), Atlanta, Georgia, May 17, 18, 19 and 20, 1921. Walter Harlan, Secretary, 701 Grand Theater Building, Atlanta, Georgia.

Retail Hardware Doings.

Iowa.

Charles McCausland, Atlantic real estate man, has sold the hardware store recently bought by him of Nels Nelson at Bryton to Tony Rasbussen and Chris Hansen.

The Farmers' Supply Company of Anita, composed of James Sheeley and C. W. Clardy, has disposed of its implement business at Anita to Archie Van Aerman.

Kansas.

B. B. Evans has moved his hardware stock to Anthony and will start a new hardware store.

A cement foundation for the new Southwestern Hardware building has been begun at Liberal. The work on the building will be rushed.

Minnesota.

Frank J. Sobota has sold his hardware store to Lawrence Smith, William Woell and Leo Heid at Browerville.

A. M. Renner has purchased the implement business of the Winnebago Implement Company at Fairmont.

Lee Hartman sold his interest in the hardware business of Tanner and Hartman to Roscoe Tanner at Fairmont.

Herman Nieland of Foxhome has bought the interest of his partner in the Foxhome Hardware Company.

J. P. Harsch and Joseph H. Grell sold their business at Genola to Steve Lepinski.

G. A. Bonhus purchased the Calhoun Hardware store at Minneapolis.

Missouri.

Morrison Brothers are closing out their entire stock of hardware at Green City. They will discontinue the business.

Charley Worley purchased the interest of his partner Fred Shelley in the hardware firm of Shelley-Worley Company at Hopkins.

Nebraska.

James H. Feese has sold his hardware business to James Wolfe at Clarke.

Farmers' Lumber and Hardware Company has been sold out to the Western Lumber and Hardware Company at Chappell.

M. O. McClure and Son bought the Polk Hardware store at McCook.

Wood River Implement Company was organized at Wood River and has purchased the implement sheds formerly owned by F. M. Hollister. The new firm consists of Mullen Brothers, Albert Fitchbone and Will Warren.

A deal has been made between Mr. Schunk and C. Binger of Blue Hill whereby the latter becomes the owner of the Binger store building on Main Street at Bladen.

Chris Newman has retired from the hardware business. His sons, Grant and Cable Newman, will continue the business and go under the name of Newman Brothers, at Hampton.

The implement store and harness shop of John F. Gorder of Plattsmouth has been purchased by Ben H. Wiles.

J. C. Harwig has sold his hardware store at Humboldt to an Omaha firm.

North Dakota.

J. W. Moore sold his interest in the Moore Hardware Company to his son, Earle Moore, and his son-in-law, C. T. Mahoney, at Bowbells.

H. Peterson and Andrew Sandsker purchased the hardware stock of the Archer Supply Company at Finley and will take possession January 1st.

Ohio.

Announcement is made of the sale of the Main Hardware Company at Sharon, by C. H. Wiltsie to R. W. Washburn and David E. Morton.

Oklahoma.

Robertson Brothers have purchased the hardware business of W. E. Vice and Sons at Laverne and the store will now be known as the Robertson Hardware Company.

South Dakota.

Clarence Ramsey and John Adams bought the Melby Hardware store at Summit.

Wisconsin.

William Horn bought the interest of H. T. Kingston in the hardware business of Kingston and Desmond at Mukwonago. The firm will continue business under the new name of Desmond and Horn.

Selling Automotive Accessories

How Hardware Dealers Can Increase Their Profits by Handling Standardized Automotive Accessories. Facts and Suggestions to Aid Them in Giving Better Service.

ACCESSORY BRANCH OF HARDWARE JOBBERS TO MEET IN ST. LOUIS.

A cordial welcome awaits the delegates and visitors to the convention of the Automobile Accessory Branch National Hardware Association, November 30 and December 1, 2 and 3, 1920, in St. Louis, Missouri.

The St. Louis Convention, Publicity, and Tourist Bureau is preparing to give unforgettable proofs of the hospitality of St. Louis to everyone in attendance at the convention.

In a circular addressed to the members of the Automobile Accessory Branch of the National Hardware Association, Francis E. Turin, director of publicity of the bureau, says:

"St. Louis is a great Accessories and Hardware center and market and it is fitting that the Automobile Accessory Branch of the National Hardware Jobbers' Association should meet in convention in this great city.

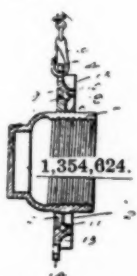
"An interesting and instructive program has been arranged for you at the convention, and if you miss this convention you will regret it.

"From the Governor of the State and the Mayor of St. Louis, down to the most humble citizen, a cordial welcome and spirit of hospitality awaits you.

"Come early and stay late."

Secures Patent for Antiskid Chain Attachment.

United States patent rights, under number 1,354,624, have been granted to Martin C. Schow, Vananda, Montana, for an antiskid chain attachment described as follows:



In a device of the character described a thimble to be mounted on a rotating hub, a pair of rings threaded on the thimble and provided with an anti-friction ball groove, an annulus encircling the ring and also provided with a groove coinciding with the first mentioned groove, anti-friction elements terminating within the groove, and means adapted for connection with the annulus and an article to be retained against loss.

Most Gasolene Economizers Do Not Save Gasolene.

According to the latest reports of the United States Bureau of Standards a lot of so-called gasolene economizers do not save gasolene at all.

Yet there are hundreds of people who will tell you that they have increased their mileage from 15 to 100 per cent since they used the stuff. That is all wrong.

The way to save gas is to "quit" wasting gas. Hundreds of drivers are wasting gas every mile they run by feeding their engine too rich a mixture.

There's the rub. Of course, a rich mixture makes starting easier, especially in cold weather.

In winter a good many drivers set their carburetors with this in mind, and do not take the trouble to thin the mixture during the warm weather.

But even in cold weather they were using too much gas, except in starting, and spending a good deal of wasted money just for the sake of that little convenience.

What did it cost? They would be startled if told that it amounted to from 10 to 50 per cent of their gas bills.

An expert's attention to carburetor adjustment will avoid too rich a mixture and help relieve the present shortage.

Hardware Store Is Logical Outlet for Accessories.

The hardware store is the natural outlet, the natural source of supply, and the logical means of development for the sale of automotive equipment.

The scope of profit and service to the customer is unlimited.

It is just as natural to look to the hardware store for such articles as it is to keep to the right side of the road.

The alert stores are realizing this more forcibly every day.

As we judge the future primarily by the past, one needs only to appreciate the large numbers of hardware stores which have increased so greatly their volume of automotive equipment business.

Arrange Your Stock to the Best Effect for Sales.

Next in importance, to the careful selection of the right quality and quantity of supplies and automotive accessories, is the arrangement of the stock.

If you wish to reach the greatest success in pushing automobile supplies, give the line a prominent place in your store.

Have your display well up to the front, where people can see it.

A full line of attractively displayed automobile supplies can not but add to the inviting appearance of your store. Then a well arranged stock advertises itself.

Don't whine. Tell people you are a failure and they will believe you. Talk and act like a winner, and in time you will become one.—Stephen Harte.

Advertising Help and Comment

Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.

It is good policy to emphasize the point brought out in the three-column advertisement shown in re-

about it. They will be able to decide much quicker when they come to your store to make the purchase,

Avoid Small Type.

Insist on readable type in your advertisements.

Don't try to spill the whole dictionary into one column.

Cut out the needless words and use the space thus saved for bigger type with fewer and better words.

* * *

One of the best arguments in selling is that the article under consideration is being used with satisfaction by a large number of people in the same circumstances as the prospective buyer, and this holds good in advertising, too, for advertising is nothing but a substitute for salesmanship face-to-face.

So the two column advertisement of Geher and Son, in the *Courier-Journal*, Louisville, Kentucky, which is shown herewith, is a very good one from that standpoint. And there are other good features about it, such as the fine illustration. The young woman leaning against the range gives a bit of human touch to the picture, and the positive statement in the last paragraph carries conviction which tends toward inducing the reader to respond to the advertisement.

A scale of prices would have removed any doubts the reader might have as to whether these ranges, being so good, might not be too expensive for her.

"Support Home Industry"

These Goods Are Made in VICTORIA

They're good goods and should be used in the building and repairing of your home

No. 1 Barbados Roofing
No. 2 Barbados Roofing Paint
No. 3 Victor Roofing

Remember—Money sent out of Victoria stays out.

Big, Bright Store to Rent—At 538 Yates Street; 120 x 30 feet.
One or two floors, with office, etc.

Hickman Tye Hardware Co., Ltd.

546 YATES STREET

Store Phone 59

Office Phone 2043

duced form in the accompanying illustration—merchants can well afford to use space in exhorting the people in their community to support home industries—and the Hickman Tye Hardware Company, Limited, which presumably is located in Victoria, B. C., Canada, serves itself well and boosts Victoria products at the same time by publishing this advertisement in the *Daily Colonist*, but why not tell something about the two kinds of roofing mentioned? There must be some difference between them, or why does the company carry both?

Even if the two are very similar, there is no doubt some point of difference, either in quality and price, or in some other way; whatever it is, tell your prospective customers

and they are more likely to come to your store, if you give them some special reason.

CATCHING UP NICELY



This year's tremendous demand for our famous

QUICK MEAL GAS RANGE

kept the big Quick Meal factory busy filling our orders. All year we have had a big waiting list, but now we are able to promise quick deliveries.

The "Quick Meal" now, as ever, is the best and most popular Gas Range.

GEHER & SON

215 W. MARKET ST.

Warm Air Heating and Ventilating

*Better Installations. How to Sell More Warm Air Heaters.
Reports of Progress in Warm Air Heater Research Work.
Ventilating Factories, Garages, Theaters, and Houses.*

STANDARDS FOR INDUSTRIAL DUST EXHAUST SYSTEM.

(Continued from last week.)

The previous installment of this instructive article described the Palmer apparatus used in the collection and counting of dust particles.

For the purposes of record, particles were grouped by sizes in the following classes:

1. Large masses about 100 standard units (0.04 square millimeter).
2. About 25 standard units (0.01 square millimeter).
3. About 1 standard unit (0.0004 square millimeter).
4. About $\frac{1}{4}$ standard unit (0.0001 square millimeter).
5. Dust too fine to count. Presence indicated by a plus (+) sign.

Gravimetric determinations were then made on the remainder of the original sample. The method here consisted in filtering the sample through an ignited and weighed Gooch crucible. The crucible was dried in an oven at 100 to 110 degrees for one hour and again weighed. The corrected difference in weight was taken to represent the total weight of the sampled dust. The crucible was then ignited over the bunsen flame and reweighed, the loss in weight being taken as the amount of organic matter present in the original sample.

In all cases a correction was applied for the control analysis. In the microscopic examination this consisted in deducting from the results of the sample analysis the number of particles in each group as found in the control. In the gravimetric analysis the weight of total solids as found in the control was deducted from the solids as found in the sample and any loss in weight on ignition of the control was deducted from that of the sample.

To convert the corrected dust count into the number of particles per cubic foot of air we must first multiply the average count per $\frac{1}{4}$ field by 4 in order to give the average count per total field—1.0 millimeter \times 1.0 millimeter. Since our cell is 1 millimeter deep this count gives the number of particles in a cubic millimeter of our sample. This value must now be multiplied by 1,000 to give the count per cubic centimeter, and again by 100, since the total amount of dust was suspended in 100 cubic centimeters of water. (In a few cases the sample did not contain 100 cubic centimeters and in these the proper figure was used.) It now remains to divide this figure by the total number of cubic feet of air in the sample. Summarizing, we have:

Particles per cubic foot of air = Count per $\frac{1}{4}$ field \times 400,000 \div cubic feet of air in sample.

The U tube used for determining the exhaust pressure was an ordinary piece of glass tubing, bent in the form of a U, attached to one end of which was a piece of rubber tubing. The U tube was filled with water, so colored as to facilitate reading.

The method of determining the U-tube reading was very simple. It consisted in applying to a hole $\frac{1}{8}$ inch in diameter, drilled in the straight portion of the branch exhaust pipe between the machine and the main lateral, the loose end of the rubber tube to which the U tube was fastened. The difference in water level on both sides of the U was then read from a scale fastened to the tube.

Velocity measurements were also made at each machine with an anemometer, so as to determine if possible any correlation between U-tube reading and velocity of air flow.

The exhaust in the principal workroom where these studies were conducted was through a rectangular opening below the wheel. The branch exhaust pipe had a bend just below this opening, and in order to secure a fairly even distribution of velocity over the area where the measurement was made, we removed the wheel and placed over the exhaust opening a rectangular box the size of the opening and 2 feet high, with top and bottom open, and made our anemometer measurements at the top of this box.

Our first studies were carried out in the "Cornering and Light Polishing Shop" of a large small-arms plant, which we shall call "Factory A"; and we desire to express our warm appreciation of the courteous co-operation on the part of the management which made these studies possible.

The "Cornering and Light Polishing Shop" in question is rectangular in shape, 142 feet long by 52 feet wide and 12 feet from floor to ceiling.

Ventilation is secured by means of 14 Fenestra windows, 10 x 18 feet. These windows are completely unobstructed by buildings on either side.

Natural light in this room is ample, artificial light being used only on dark days.

The operation carried on is that of polishing gun parts and magazine tubes.

This is accomplished by holding the piece in close contact with the abrasive wheel and so moving the piece that a smooth polished surface is obtained.

The equipment in this shop consists of five rows of polishing machines mounting approximately 29 wooden wheels, 20 small leather wheels, and 6 belts.

Four types of exhaust piping are in use. For polishing magazine tubes a 2 x 6 inch overhead exhaust is used.

For polishing large rifle parts a standard down-draft exhaust hood is provided having a 10 x 6 inch throat opening.

For the small leather wheel equipment no hoods are used, the exhaust pipe terminating in a 3-inch opening beneath the wheel. For the emery belts a special form of adjustable hood and pipe is employed. The emery wheels are made by gluing the emery powder (No. 90 is generally used) to the wheel by means of a thin application of glue.

When an emery wheel is to be used for the first time, after being freshly coated with emery, it is necessary that all of the loose and large or coarse particles of emery be removed.

This is accomplished by means of a piece of metal, or in some cases by the use of a paddle-shaped piece of wood coated with carborundum dust, held firmly against the wheel. This is called truing the wheel.

During the polishing process oil must frequently be applied by holding firmly against the wheel an oil-soaked roll of cloth.

In the process of polishing gun parts as here performed there are, therefore, in the main three sources of dust:

1. Truing the wheel.
2. Oiling the wheel.
3. Polishing the gun part.

According to nature and origin the dust may be grouped as follows:

Organic:

Wood.
Cloth.
Glue.
Leather or felt.

Inorganic:

Carborundum.
Metal.
Emery.

Two rows of machines were selected as being best suited to the purposes of our experiments, one row along the center aisle at the east end of the room and the other row along the north window side of the east end.

The operation performed on the window row of machines was that of polishing the magazine tubes, and on the center row that of polishing the trigger guards of the rifles.

These two particular rows were selected because they presented the most continuous flow of work and also the most continuous of the grinding operations.

The Palmer apparatus was placed midway between two adjoining polishing machines, a position as near a machine as could be obtained without interfering with the work of the operator.

The standardization of experimental conditions was exceedingly difficult to obtain, owing to the fact that the work in this shop was of an emergency war nature, and interference with the operators was not to be considered.

(To be continued next week.)

Differ as to Use of Coke in Warm Air Heater.

Although the shortage of coal has been overcome to a considerable degree, yet in many localities householders are still experiencing difficulty in getting an ample supply for the winter.

In numerous instances, coal dealers are suggesting to their customers the use of coke as a substitute for soft coal and anthracite.

Frequently, uninformed householders seek the advice of their warm air heater installers as to the advisability or advantage of the use of coke.

Opinion differs widely on this subject.

Some installers say that coke will melt the grates and fire pot if not used properly.

Many say that coke produces excessive heat which soon burns the life out of both grates and fire pot because the householder does not know how or does not take the trouble to regulate drafts accurately enough to prevent the coke from producing too much heat.

One installer who was asked for his experience on the subject declared that coke burns out the grates and fire pot a little faster than other fuel but not enough to offset its benefits against soot and dirty coal.

Another objection advanced against the use of coke in the warm air heater is that it is too difficult to maintain a fire at an equitable temperature with coke.

The consensus of warm air heater installers seems to be that in actual practice coke shortens the life of a warm air heater principally because the householder will not pay close enough attention to the regulation of the drafts when using this form of fuel.

Registers Trade-Mark for Roof Ventilators.

Under number 118,738, United States Patent Office registration has been granted to the Milwaukee Corrugating Company,



Greenfield, Wisconsin, for the trade-mark reproduced herewith. The particular description of goods to which it is applied is roof ventilators, adapted by the

action of the wind thereon to draw air from the buildings on which they are mounted. The Company claims use of this trade-mark since October 25, 1918.

Sell the Best in Order to Give Full Satisfaction.

The same earnestness of reasoning will enable the warm air heater dealer to sell high grade products as he expends upon inferior or inadequate furnaces.

The trouble with many furnace dealers is that they yield too readily to the customer's desire for saving a few dollars on the cost of the job.

This desire is due, in the majority of cases, to ignorance of the facts.

It is not difficult to convince the average householder that he will get satisfactory heat and comfortable conditions only from a warm air heater capable of delivering the full amount of heat required for producing conditions of comfort in all kinds of winter weather.

The only time when a dealer is justified in yielding to the cost objections of the customer is when the latter insists that he will not pay the price asked for the better and bigger furnace.

In such circumstances, he should firmly and, of course, diplomatically impress upon the customer that

the lower priced and smaller warm air heater can not be guaranteed to give him the full degree of satisfaction which the requirements of his house demand.

Dr. Hill Organizes Company to Test Heating and Ventilating Apparatus.

E. Vernon Hill Company, Chicago, Illinois, has been organized as "aerologists," specializing in testing heating, ventilating and air conditioning apparatus, and in the design of special equipments. The company will also manufacture and distribute air testing instruments, psychometric and synthetic air charts, etc. Dr. E. Vernon Hill, president of the American Society of Heating and Ventilating Engineers, is at the head of the new company, which has opened offices at 117 North Dearborn Street, Chicago.

Heating Engineers Will Hold Convention in Philadelphia.

In response to the solicitation of the Eastern Pennsylvania Chapter and as a recognition of that Chapter's work in building up membership, the Council of the American Society of Heating and Ventilating Engineers has decided to hold the next annual meeting of the national organization in Philadelphia.

A preliminary business session will be held in New York City, January 25, 1921, in accordance with the Society's constitution. Adjournment will then be taken to Philadelphia, where the professional sessions will take place, January 26, 27, and 28, 1921.

The members of the Eastern Pennsylvania Chapter—which is the largest in point of numbers—are working out a program of entertainment which will make the delegates enjoy every minute of their sojourn in Philadelphia.

Announces the Demise of Professor Allen.

From the office of C. W. Obert, Secretary, American Society of Heating and Ventilating Engineers, comes the distressing news of the demise of Professor John R. Allen, Director of the Society's Research Bureau at Pittsburgh, Pennsylvania, which occurred Thursday, October 28th.

The subjoined sketch of his career is furnished by Secretary Obert:

Professor Allen was 51 years of age, having been born in Milwaukee, Wisconsin, July 3rd, 1869. He received his preparatory education at Milwaukee and at the Ann Arbor, Michigan, High School.

In 1892 he was graduated from the University of Michigan with the degree of B. S. (M. E.), receiving his master's degree from the same institution in 1896.

For two years Dean Allen was connected with the L. K. Comstock Construction Company.

A brief record of his work since then follows:

Mechanical Engineering Department, University of Michigan, as Instructor, Assistant Professor, Junior Professor, and Professor of Mechanical Engineering, 1896-1911.

Dean of the Engineering Department, Robert College, Constantinople, Turkey, 1911-1913.

Head of the Mechanical Engineering Department, University of Michigan, 1913-1917.

Dean, College of Engineering and Architecture, University of Minnesota, 1917-1919.

Past-President, The American Society of Heating and Ventilating Engineers.

Past-President, Michigan Engineering Society.

Past-President, Michigan Chapter, The American Society of Heating and Ventilating Engineers.

President, Minnesota Chapter, The American Society of Heating and Ventilating Engineers.

Honorary Member, National District Heating Association.

Member, British Institute of Heating and Ventilating Engineers.

Member, American Society of Mechanical Engineers.

Member, Society for the Promotion of Engineering Education.

Member of the Honorary Societies, Tau Beta Pi and Sigma Psi.

Professor Allen's passing will be the cause of deep regret not only to the membership of the Society, but also to the entire engineering profession.

His monumental work in the field of Research, however, will live on after him, and the organization which he perfected at the Society's Research Bureau at Pittsburgh, will continue as a monument to his memory.

He had during the past few months perfected his organization there to a point, where it will be operative in his absence and the standard which he had created therein will prove a strong incentive for the continuation of the wonderful work which he inaugurated.

Danger of Coal Shortage Is Practically Ended.

The United States Geological Survey sends out an announcement which will warm the hearts of the people.

Barring strikes, hoarding, railroad embargoes or other mishaps, there will be no fuel shortage this Winter.

Some time ago the National Coal Association declared that the bituminous output must reach 12,000,000 tons a week, if danger was to be averted.

As though in answer to this challenge comes the news that during the week ending October 9 the total amount received was 12,075,000 tons, with every prospect that the margin of safety would grow steadily larger.

Follow Your Jobs With Service.

Your relation with the patron for whom you install a warm air heater should not cease when he pays your bill.

If you do a good job and install a warm air heater big enough to give thorough satisfaction, your customer is likely to help you make other sales by praising your work.

But, in order to set him to thinking and speaking in your favor, you must follow up your jobs with intelligent service and helpful advice.

Practical Helps for Tinsmiths

No Two Jobs Are Exactly Alike. Therefore, the Sheet Metal Worker Has to Meet Each Difficulty as It Comes. Send Your Problems to Us. Let Our Experts Help You.

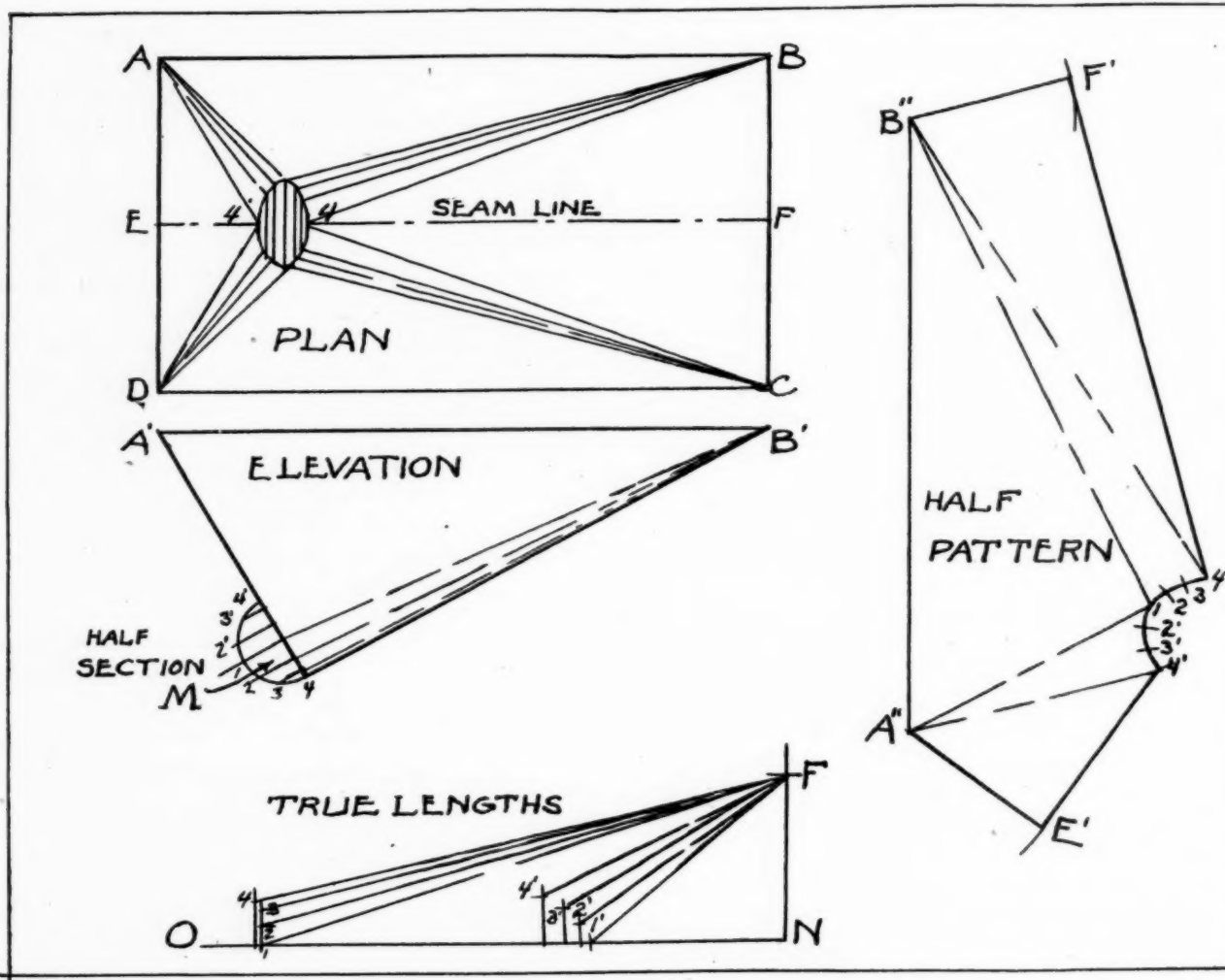
PATTERNS FOR GRAIN DRIER HOOD

By O. W. Kothe, Principal St. Louis Technical Institute and Instructor in the David Rankin, Jr., School of Mechanical Trades, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

In grain elevators and mills where grain must be dried to take the dampness out of it and make it hard, hoods of various kinds are used. The one in our

make them equal to half sectional lines 3-21 of M. Make N-F equal to half of the width of plan as C-F. Then draw lines F-1-2-3-4. Next pick the elevation lines as A'-1'-2'-3'-4', and set on line N-O. Erect lines equal to the sectional lines as 1'-2'-3' in M, and draw lines to F. This gives the true lengths.

To set out the pattern draw any line as A''-B'' equal A'-B' of elevation. Then pick true length F-1, using B'' as center, strike arc as at 1. Next pick true length



Pattern for Grain Drier Hood.

drawing shoots off to an angle. Its width, length and depth must be taken from plans or direct from the job.

First draw the side elevation as A'-B'-4, and strike half section M to your diameter of pipe. Divide this section in equal spaces, and draw lines to the base as 4-4', and then draw the triangle lines to corner B'. The plan view is not necessary, it is only shown here to make the drawing plainer.

To develop the true length, draw a right angle as F-N-O. Then pick the elevation lines as B'-4-3-2-1 and set on N-O. Erect lines from these points and

F-1' and using A'' as center, cross arcs in point 1. Pick one of the girth spaces from M, and using 1 as center strike small arcs as at 2-2'. Now pick true length F-2, and from B'' cross arc 2. In the same way pick true length F-2' and A'' as center cross arcs at 2'. Repeat this process until points 4-4' are established and then pick the half width as F-C, and using B'' and A'' as centers, strike arcs as at F' and E'. After this pick the side lines as A'-4' and B'-4 of elevation, and using 4 and 4' as centers, cross arcs in points F' and E' in pattern.

This enables drawing lines through all points where

arcs cross, and when laps for riveting are allowed, also for flanging, the pattern is finished.

Michigan Sheet Metal Men Are Vigorously Organizing.

The plan of forming district associations of the Michigan Sheet Metal Contractors' Association is working out to the satisfaction of the officials of the state organization.

The recently organized Niles District Association held an enthusiastic meeting October 19th at which Frank T. Daly and Frank E. Ederle, President and Secretary, respectively, of the Michigan Sheet Metal Contractors' Association, were present to discuss the proper system of spreading overhead expenses.

The matter was treated from numerous points of view and it was the general opinion at the conclusion that productive payroll basis is the simplest and most convenient way to solve the problem.

The interest of the meeting was enhanced by an absorbing talk by J. C. Greenberg of the Steelcote Manufacturing Company, St. Louis, Missouri.

The next meeting of the Niles District Association will convene in Dowagiac, Michigan, Tuesday, November 9th, in the store of Hinckley and Garrett. An invitation to all hardware dealers and sheet metal contractors in the Niles District will be issued for this meeting and it is the expectation of the officers that there will be a large attendance.

The Chelsea District Association, also recently organized, met Thursday, October 21st, in the shop of Updike and Murphy.

Following the regular routine of business, T. B. Jones of Grass Lake, was proposed for membership and accepted.

A blackboard demonstration of overhead costs was put on by Frank E. Ederle, Secretary Michigan Sheet Metal Contractors' Association. The feature of the evening was an address on "Better Business Methods for Sheet Metal Contractors" by J. C. Greenberg of the Steelcote Manufacturing Company, St. Louis, Missouri, who has won a high place in the regard of the trade by his clever articles in *AMERICAN ARTISAN AND HARDWARE RECORD*. He showed convincingly that better business methods result in more profits.

Kalamazoo Local Studies Cost Forms and Pricing Cards.

The cost forms furnished by the Michigan Sheet Metal Contractors' Association and pricing card forms constituted the chief topics of the regular monthly meeting of the Kalamazoo Sheet Metal Contractors' Association, held in the office of William U. Metzger, Kalamazoo, Michigan.

The object of the pricing card forms is to provide members of the Local with a convenient card upon which to make out their selling prices.

Each member is given a price card and, after the blackboard demonstrations at the meeting, determines for himself just what he should receive for the various articles in his line.

Beyond question, this is a helpful and practical method of education in price accounting and is prov-

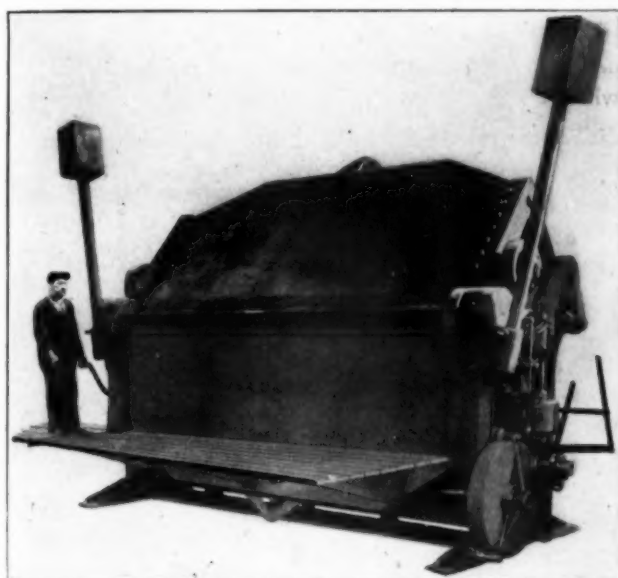
ing to be one of the most gainful helps rendered to the members of the Kalamazoo Local.

Dreis and Krump Make Biggest Bending Brake in World.

The largest plate-bending brake in the world was recently furnished the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia, built by the Dreis and Krump Manufacturing Company, Chicago.

The brake weighs 30 tons and has a capacity of bending plates 12 feet long up to $\frac{3}{4}$ inch thick cold and is driven by a 40 horse power motor directly connected to the brake.

The brake is made of steel throughout, the main body being constructed of large steel plates braced with truss rods, and the housings are steel castings.



Largest Plate-bending Brake in the World, Built by Dreis and Krump Manufacturing Company, Chicago, Illinois.

The links which connect the upper and lower jaws are huge forgings. Counter weights balance the bending leaf.

The motor is mounted within the machine, driving the friction clutch shaft, which has direct and reverse friction clutches. The reverse motion for lowering the bending leaf is obtained through an idle gear.

The upper jaw is raised and lowered by means of a power clamp consisting of a manganese bronze gear mounted on an eccentric which is controlled by a lever on each end.

Friction clutches trip out when sufficient pressure is exerted on the plate, this pressure flattens buckled plates and clamps them securely and requires no adjustment for the various thicknesses of plates.

An important feature of this machine is the rapidity of operation. The time consumed in making a right angle bend is less than one minute.

Another feature is that no dies are required for different thickness of metal, radius of bends or degree of angle which plates are bent.

Cooperation is the law of life.

Sheet Metal Contractors Lack Proper Capitalization for Their Organization Activities.

Why Master Sheet Metal Men Are Not Getting Full Returns for Their Investment in Association.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD, by J. C. Greenber, Peoria, Illinois.

(Copyright 1920 by J. C. Greenberg.)

Have you sheet metal men ever stopped to figure out why you are organized? Have you ever given thought to the idea of organization? If you have not, let me take you over the coals for a little hot time and see if a few burns will not wake you up. In this article, my main idea is clearness. I do not want to impress you, I don't want to get you to believe what I say. I do not care whether you believe me or not, but I do want to make myself clear. I want to be so clear that every reader will understand me without a single doubt as to what I mean. I want the boss sheet metal man to take this article to bed with him, and dream over it. If you do this, I will guarantee that you will wake up next morning with a clearer understanding as to your duties as a boss sheet metal man, and as an associated business man.

The Association of Sheet Metal Contractors is an organization for the betterment of the trade. For the improvement of business relations, and for the uplifting of trade affairs in general. This is my understanding, and yours. Now, then, since you are associated, and have a recognized standing, let us see if you are conducting your affairs in a logical, sensible manner.

In order to be a successful association, you must help your members to solve the problems peculiar to your business. Among the many problems you have is one great big problem that is still beyond your control. This is the labor problem. You know, and your men know, that the boss depends on labor for profit, and that labor depends on the boss for profit. One is no good without the other. It follows then, that since both are dependent on each other for success, they should work in harmony. If one has the upper hand there is sure to be a conflict. Therefore, in order to protect yourselves from the upper hand of the other, you have two organizations. One is the Journeyman Tinnners' Union, and the other is the Masters' Trade Association. Here is where the division is. The union is on one side, and the boss is on the other side. Each organization has

its own principles, its own standards, and its own demands. Each is organized to get its respective demands in the easiest possible manner.

The attaining of the demands depends upon just how strong the organization is. If it is well organized, it has power. If not well organized it has no power. Which in your opinion is the best organization?

I want to hand it to the union tinner for one thing. He is well organized, well fortified, and sleeps easy every night of the year. How does he do it? The answer is as easy as rolling off a log. He *spends money to get what he wants*. He is aware of the greatest business fact which is, *good service costs good money*.

First, when he wants to join the union, he has to come across with *one hundred hours' pay* as initiation fee. Then to keep the good work up he pays two dollars a month as regular dues. This means that if he gets one dollar an hour, his initiation fee is *one hundred dollars*. If he gets one dollar and a quarter he pays *one hundred and twenty-five dollars* for initiation fee, and the same two dollars a month as dues. If he is in trouble, or desires to make a demand, he asks headquarters to send a *five thousand dollar man*

down to do his talking for him. He knows that a five thousand dollar man has a *five thousand dollar brain*, and at that price, he gets what he wants. If there is a delay in settlement, the union feeds him till he goes to work again. This is as simple as A B C.

Now, then, what does the Associated Master Sheet Metal Man do? He pays *ten dollars* for initiation, and about six dollars a year for dues, and expects to do big things for such a measly cheap cost.

Because it is cheap, it acts cheap, and gets cheap results. It is poverty stricken, and helpless in case of trouble. Believe me, it takes money to make the mare go. Talk won't do it. Money power can buy good man power, and good man power can do great things.

Each state should make it possible to have a *five thousand dollar secretary* to keep up life and enthusi-

You can't get good service without paying for it. Efficient trade organizations can only be maintained by having somebody in charge of the work who can afford to give all his time and thought to the growth of the organization. This means that the organization's treasury must be kept in well filled condition. A ten dollar bill once a year won't do it.

Ask one of your journeymen workers how much he pays into the Union treasury as a starter and how much he pays every month, and then make up your mind to pay at least as much as he does, into your local association. You will soon find that your investment will pay big dividends.

asm, and get new members. When such a man approaches a prospective member, this prospect will listen to him.

You must have equal power to meet the power on the other side. You must have a trump to meet a trump, or you are out of the game. You must have a good man in every state to look after your interest, and see that all is well. Organization is not merely a name—it is real action for good. Under present circumstances, just what can you offer to your members? What inducement can you offer for *ten dollars a year*?

Here are ordinary working men working for you, who are brave enough to spend real money to get results, while you, the bosses, are expecting to get something good for a cheap price—and you call yourselves business men. Stop—look—and listen. Where will you get off at eventually? You as bosses should be wiser than men who work by the hour, and should be able to see the wisdom of spending money for a service you *must have*. The union man pays more than *ten times* as much as you do for a starter, and more than twice as much as you do each year. This is why they get *ten times more service than you do*.

In some states, the Associated Master Sheet Metal Men pay more than I mentioned. They pay in accordance with the number of men they employ, or the amount of work they do. This is O. K. of course, but at that it is by no means sure. If business is good, he pays more, and if poor, he pays less. The same way with the number of men employed. It should be an equal amount for everybody, and a sure shot every time. I am absolutely certain, that every sheet metal man would be glad to pay one hundred dollars a year, *if he could be shown the reason for it*.

What is two dollars a week for a good thing in your business? I have visited hundreds of cities where there are locals under the National Association of Sheet Metal Contractors, and they meet in a different shop every meeting night. Just think of it—*too poor to have a home*. Do you call this business?

Every town should have a local association, with a permanent address. There should be a Sheet Metal Club in every town, with plenty of books on Sheet Metal work. It should be a temple of information, and a place of social intercourse where a member could come up at will. The foremen and workmen should be able to come up and get information for their own good.

The Association should be rich and dignified, and be a place of respectful mention. Your state secretary should visit you at certain periods, and lecture to you along the lines of useful knowledge, and build up your knowledge of business. Your secretary should have district conventions where the members can meet more than once a year, and not depend solely on the annual convention.

There are a thousand things that the Master Sheet Metal Men should do to become successfully associated. They can do these things if they want to, but they must be shown first the how and why of the thing.

One thing is certain, and it is this. You as sheet metal men *will never get good service for nothing*. There is no use in trying. Wake up to the fact that

you *must* have the kind of service I have outlined and go get it. This is the only way you will ever be able to carry out your principles, and settlements of your business problems. If there is any other way, let me know about it.

I said at the outset of this article, that I had a desire to make myself clear. The only way I can be clearly understood, is to spill my beans so you can all see them on the table. This article sounds like I am trying to pick a quarrel with somebody, or that I am trying to call somebody a lot of pikers, but I assure my readers on my word of honor, that it is not the case. It takes a big jolt to wake a fellowman up, so he will look about him and see what he is missing. It is my intention to wake the Association up and get to doing big things.

Look at the Hardware Men's Association. They are strong, prosperous and respected. They are a real factor in the commercial world, and everybody knows it. Why? Because they are well organized, they spend real money to get results, and they can see that in unity there is strength.

No one bullies them, they are at nobody's mercy, and they are a lot of free-hearted, live-wire business men. They have to be in order to hold up the dignity of their association. Some of them may be pikers at the start, but they soon get rid of that cheap feeling, and become real associated men.

Why can't the Master Sheet Metal Man do the same thing? Why can't the Sheet Metal Man wake up and see that they themselves are holding back their prosperity and independence? Spend money. You must give in order to get. This is a law of nature and you can't beat it.

Oh, how I wish you could see this as I do. How I wish you could see the great power and advantage in real association. How I wish you could see the great opportunity there lies in organization.

Think over this. Stop—Look—Listen.

Patent Office Registration for Metals Is Granted.

American Sheet and Tin Plate Company, Pittsburgh, Pennsylvania, has obtained United States Patent Office



registration, under number 109,515, for the trademark shown in the accompanying illustration. The Company claims use of this trade-

mark since June 30, 1920. The particular description of goods to which it is applied is iron and steel sheets, and plates and tin and terne plates.

Indiana Auxiliary Will Meet Friday, November Fifth.

For the purpose of uniting all the sheet metal contractors of Indianapolis in one strong Local, the Jobbers' and Salesmen's Auxiliary to the Sheet Metal Contractors' Association of Indiana, will hold a meeting

Friday evening, November 5th, in the Claypool Hotel, Indianapolis, Indiana.

The Auxiliary is fortunate in numbering among its members men who are actually enthusiastic in the promotion of the interests of the trade. Their enthusiasm is of the sustained sort which accomplishes big things.

Describes Copper Situation.

One of the leading producers of copper in America thus describes the present situation as regards the red metal:

"We are not going through any new stage but are simply in a cycle which occurs every once in a while in which it is difficult to move copper. Consumption is not fading away and manufacturers are still working on old orders.

"The entire world is still in the process of readjustment and why not copper as well as other industries?

"Present prices are perilously near production costs for many of us and below in a number of cases.

"It is simply a case of consumers not buying because their own new orders are coming in very sparingly.

"Copper has been offered for sale below 17 cents a pound with consumers not interested.

"It is plain that consumers are going on a hand to mouth basis and until the price suits them or they receive some new orders we can do nothing to hasten the movement of the metal.

"My own knowledge of conditions tells me that the first eight months of 1920 witnessed the greatest melting of copper in the country's history barring the war period.

"Brass is slowing down on account of automobile curtailment but wire drawers are busy and big orders confront them.

"Europe is held back through lack of credits. Germany is paying for copper in American dollars and with the mark at its present depreciated price it is plain that further buying from that source is to be limited unless credits are arranged."

How to Make a Cold Lacquer for Black Sheet Metalware.

Among the many useful new processes and preparations that were worked out during the Great War, the following method of protection against rust may be of use to workers who make articles of black sheet steel.

It was discovered at the Jeffersonville Quartermaster Depot and served a good purpose in reclaiming hundreds of thousands of bake pans, kettles, etc., manufactured of the above named material.

After the rust spots were removed—either with wire brushes or by sand blast—the article was dipped in a mixture of black engine oil, mineral spirits and paraffin oil—45 parts each of the first two and 10 parts of the third, liquid measure.

Unless the air is very damp, so that evaporation is slow, the lacquer will usually dry in less than an hour, so that the article can be handled without smutting.

But if the work is done in the open on cold or damp days, it will sometimes take several hours to set.

Once it is dry, however, the lacquer will stay on for a long time, as is evidenced by the fact that the bake pans which were thus treated in the summer of 1918 are still in good shape.

Begins a Life of Happiness.

What he unreservedly affirms to be the beginning of a life of happiness took place in Chicago when J. H. Christman, Sales Manager Milwaukee Corrugating Company, Milwaukee, Wisconsin, was married to Miss Marie Gibbons of this city.

His fellow workers in the Milwaukee office sent him the following telegram:

"Congratulations.

"League of Nations cuts no ice with you, we think.

"It's home relations, table rations, and the dishes in the sink.

"Although entangling alliances are taboo,

"Accept our best wishes to you two."

Better Judgment Is Needed.

"We have spoken frequently of the temperamental character of our business people," states the National Association of Credit Men in a shaft aimed directly at the business man in connection with existing conditions of business.

"They blow hot and they blow cold and seemingly have no intermediate state.

"A year ago there was a wild scramble for merchandise.

"We urged moderation, declaring that an unfavorable reaction would come.

"At present there is an equally demoralizing scramble to return merchandise, to repudiate contracts and to do things which the good thinking merchant ought not under any circumstances to do.

"Because of this condition, business is hesitating and some industries are shutting down indefinitely.

"If we had but kept our heads and been moderate a year ago, this situation could in all probability have been saved."

Increases Profits by Getting More Variety of Contracts.

There is no slack season for the sheet metal contractor who studies the possibilities of the trade and puts his studies into action.

Most of us fall into the habit of following familiar pathways.

The sheet metal contractor who develops a big volume of business is the one who breaks away from the beaten track.

He keeps his shop busy every working day of the year by getting more variety of contracts.

Sheet metal is used for an almost endless list of purposes.

For example, private garages can be and are satisfactorily and economically built of sheet metal.

Why not go after this class of contracts? Scores of householders today are prospects for sheet metal garages.

It ought to be easy to convince them of the superior advantages of sheet metal in this respect.

Instructive Notes and Queries

The Service of This Information Bureau Is Free to Our Subscribers and They Are Urged to Use It Freely.

Describes Sources of Tin.

Mr. Frank Merricks, C. B. E., an English authority on tin, says that about one-half of the world's supplies of tin is mined in the British Empire, the chief producing country since 1891 being the Federated Malay States.

The other tin-producing countries of the empire are Cornwall, Nigeria, Australia and South Africa.

The principal foreign tin-producing countries are Bolivia, the islands of Banca and Billiton in the Netherlands, East Indies, Siam and China.

Prior to 1891, the tin output of the empire was confined to Australia, British Malaya and Cornwall, the value of the Australian production being £9,879,539, while that of British Malaya was estimated at £5,400,000.

The value of the Nigerian output is becoming important, and today exceeds that of Australia.

The output of tin in British Malaya has fallen during the last few years, and in 1919 amounted to only 36,867 tons, as against nearly 50,000 tons in 1914.

Simultaneously, tin production in Bolivia, Siam and China has increased, so that the proportion of the world's tin supplies produced in the British Empire is not so large as it was until quite recently.

The empire's tin output, however, is still more than ample for her own needs, and must also be drawn upon by other countries that are large users of this metal.

Most of the tin mined in British Malaya is refined in the smelters of the Straits Trading Company, at Singapore.

These tin smelting plants are the largest in the world, and deal not only with the produce of the Federated Malay States but also with ore shipped to Singapore from Siam, the Netherlands, East Indies, South Africa and Australia.

The exports of tin from Singapore are consequently much greater than the actual production of British Malaya.

In Nigeria the existence of tin on the Bauchi plateau was known to the natives long before the arrival of the British, while it became known to Europeans as long ago as 1885 at which date, however, the country was too unsettled for prospecting.

An official mineral survey was undertaken in 1903, tin mining was started in 1906, exports of tin concentrate were first recorded in 1907, and in 1918, 82 tin mining companies were operating in the northern provinces of Nigeria, mostly on the Bauchi plateau.

Up to the present, the highest recorded export tonnage for any year is 9,966 long tons of ore in 1917, the figure for 1918 being 8,294 tons.

In Australia, Tasmania is the largest producer of tin, followed by New South Wales and Queensland, while small quantities are obtained in Victoria and in

the northern territory.

A large proportion of the output in New South Wales is won by dredging in the Tingha, Emmaville and Glen Nines divisions.

Bolivia is the second largest tin producing country in the world.

Before the war, most of her output of "barilla," or tin concentrates, containing 60 to 65 per cent of tin, went partly to Germany and partly to the United Kingdom for smelting.

In 1919, over 27,000 tons of tin ore were imported into this country from South America, the average annual output of which is about 23,000 tons.

The production of tin ore in Siam is advancing, the average annual output being about 8,300 tons.

The ore is sent to Singapore for smelting, and the product comes into commerce as "Straits" tin.

China's production is also reported to have increased considerably in recent years.

The chief locality of production is Kochiu, about 22 miles from the French railway from Yunnan to Haiphong.

The ore is smelted mainly in native furnaces to a metal of about 90 per cent to 92 per cent purity, and is then sent to Hong Kong, where it is refined, part of the product being returned to China for consumption there, and the remainder being exported.

Recently, new deposits of tin have been discovered in Tasmania. Their extent and commercial value, however, have not yet been determined.

Vast stretches of unexplored land in Russia await the inspection of geologists and new sources of tin may be found there.

* * *

Percolator.

From Frederick H. Lord, Belle Haven, Virginia.

Please advise where I can buy a percolator or coffee pot of copper or aluminum, to hold from five to eight gallons such as are used in hotels.

Ans.—Albert Pick and Company, 212 West Randolph Street, Chicago, Illinois Lalance and Grosjean Manufacturing Company, 299 Broadway, New York City; Landers, Frary and Clark, New Britain, Connecticut.

"Columbia" Bicycle.

From Seibel Hardware Company, Sigourney, Iowa.

We would like to know who manufactures the "Columbia" bicycle.

Ans.—The Westfield Manufacturing Company, Westfield, Massachusetts.

Swartwout Roof Ventilator.

From D. M. Haines, 1933 West Lake Street, Chicago, Illinois.

Can you tell me who makes the Swartwout roof ventilator?

Ans.—Ohio Blower Company, 9300 Detroit Avenue, Cleveland, Ohio.

Weekly Report of the Markets

General Conditions in the Steel Industry. Review of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

PRODUCTION OF STEEL HAS SLIGHTLY SLOWED DOWN.

Owing to the general lessening of orders during the present period of price readjustments, there is a slight slowing down of production in the steel mills throughout the country.

The withholding of new business by consumers, cancellations, falling off of export trade, etc., have been noticed principally among the independent producers, some of whom are operating at only 60 per cent of capacity, but a fair average of all the independents together would be 75 per cent.

The leading interest and its subsidiaries, however, have received a negligible amount of cancellations due to its lower scale of prices, and the well filled condition of its order books has enabled it to maintain a production rate of approximately 89 per cent of normal.

To offset the recent slowing down of business is the large volume of railroad and structural orders that have been held up during the war and which are still pending.

The \$60,000,000 in bonds to be issued shortly to finance the purchase of equipment for the railroads should react favorably for the equipment companies and steel interests supplying them because of the fact that funds received from these bonds will be available immediately and it is anticipated that many orders for rolling stock and rails will be placed in the near future.

These bonds are to be issued by the National Railway Service Corporation which will avail itself of the \$300,000,000 fund set aside by Congress for the use of the railroads.

The immediate stumbling block to extensive equipment buying is the present slow rate of distribution of this fund and the abnormally high prices but as the first is being overcome and the latter going through a period of readjustment big business in the near future is not an unreasonable prediction.

Steel.

That a deadlock exists between buyers and sellers of steel products, and that the present stagnation characterizing that market is not caused by a disappearance of demand is evidenced by the fact that there is a strong potential demand for iron and steel.

Buyers are holding off, not so much to force prices lower—automobile manufacturers excepted—as to find out just how far they can recede without hampering production.

Producers realize that a price cutting campaign for business would affect adversely contracts already on their books, and might only encourage prospective buyers to wait for further declines.

Copper.

Consumers are still only mildly interested in making purchases of copper for shipment over the remainder of the current year. Some business is being done daily, mainly for November and December shipment.

It is notable, however, that some of the largest producers are less anxious to sell, and there are predictions that the buying movement, long-expected and long-deferred, will develop in the next fortnight.

As previously pointed out, an improvement in the statistical position, brought about by further curtailment in the production, would prove the salvation of the producing interests at a time when the foreign consumer has small buying power except on an open credit basis which producing interests are unwilling to grant.

Consumers made some few purchases last week but the continued softening of the market has caused them to withdraw until there are better indications that the bottom has been reached.

There still remain some 600,000,000 pounds surplus which will have to be at least partially exhausted before producers can count on a sellers' market again.

It is surprising that with the light demand from foreign consumers exports this month bid fair to be at least 15,000 tons if not more.

Exports in August, it will be remembered, were over 20,000 tons, which was the smallest outgo of any month this year, with the exception of September, during which, it is estimated, 15,000 to 20,000 tons were shipped.

Thus far in October exports have been very close to 10,000 tons.

Leading manufacturers of brass and copper products have just made another reduction in prices of approximately a cent a pound.

The base price of copper sheets is now 25.50 cents, high brass sheets 22.25 and low brass sheets 24 cents.

Tin.

As a consequence of rising prices in the London market, quotations in the domestic market have taken an upward trend.

Pig tin has advanced in Chicago from 43¾ to 45 cents per pound and bar tin from 45¾ to 47½ cents per pound.

Lead.

There was no change in lead prices in the outside domestic market yesterday, 6.75 ruling for all deliveries in New York from spot to the first of next year and 6.50 cents a pound for the same deliveries in St. Louis.

The leading interest, however, continues to quote 7.25 for New York and 7 cents for St. Louis.

Another shipment of lead was imported from Germany this week and amounted to 250 tons.

Lead ores are being offered in the Joplin district at \$65, but some of the mines in operation are still filling contracts on lead sold ahead on a basis of \$110 a ton.

In the Chicago market, American pig lead has declined from \$7.60 per 100 pounds to \$7.45 and bar lead from \$8.35 to \$8.20 per 100 pounds.

Solder.

Chicago quotations on solder are the same as those of the past week. The prevailing figures are: War-ranted 50-50, per 100 pounds, \$29.25; Commercial 45-55, per 100 pounds, \$27.75; and Plumbers', per 100 pounds, \$25.25.

Zinc.

Purchases of zinc ore during the past week fell to 3,250 tons, which was approximately the entire production and those properties shut down were not in the market.

Following the July curtailment it is estimated that the production will be reduced 40,000 tons this year.

It is hoped by producers that the two efforts at reduction of output will materially lessen the stock on hand by the end of the year.

The domestic market continues extremely dull, but with little change in the quoted figures. Some producers are willing to take early business, though not slashing to get it, while most of the producers continue to maintain an uninterested waiting attitude.

The dullness is reflected in the Chicago market by a decline of 20 cents per hundred pounds in the price of zinc in slabs. The reduction is from \$7.95 per hundred pounds to \$7.75.

Sheets.

Sheet mill operations are averaging not over 85 per cent at the outside, being affected by difficulty in obtaining steel, particularly on the part of the leading interest, as well as by some minor influences.

The leading interest is operating at considerably under 85 per cent, and about one-fifth of its operation is on conversion arrangements, the sheet customer supplying the sheet bars.

On galvanized sheets, a decrease of 90 cents per 100 pounds has taken place in the Chicago market.

Tin Plate.

There is no indication that independents will open their order books for the first half of the new year before the leading interest takes action.

On one occasion, a few years ago, the independents took the lead, but that was exceptional.

All or nearly all the independents would like to see an advance made over the \$7.00 price that has been standard since the Industrial Board adjustment of March 21, 1919.

The leading interest shows no signs of contemplating any advance, however, nor does it show any signs of being likely to open its order books in the near future.

It is concerned chiefly with clearing off the business now on books, which at the present rate of operation will take until some time in April.

In the meantime, a sharp reduction has occurred in Chicago prices for first quality bright tin plate—ranging from a decrease of \$2.00 per box of 112 sheets IC 14x20 to a \$3.60 decline per box on IXXX 20x28. Coke plates have also incurred a downward slant.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: old steel axles, \$31.00 to \$32.00; old iron axles, \$40.00 to \$41.00; steel springs, \$23.50 to \$24.00; No. 1 wrought iron, \$20.00 to \$21.00; No. 1 cast, \$28.00 to \$28.50; all per net ton. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 10 cents; light brass, 6 cents; lead, 5 cents; zinc, 4¼ cents; cast aluminum, 12½ cents.

Pig Iron.

Consumers are not buying except as necessity compels them. The iron masters are holding steadily for the prices which have been ruling right along.

They know very well if they made a reduction of \$10 a ton it would not stimulate buying—the only result would be to make consumers feel that the market was weak and that they would make money by waiting longer.

But producers are in no position to make any concessions because it has been pointed out that their costs are already right on a level with their selling prices.

If in the general reorganization after the war pig iron must meet the altered conditions, as consumers unanimously seem to expect, it is very evident that the iron master is up against a problem which at present is incapable of any solution.

According to the weekly pig iron market report of Rogers, Brown and Company, Cincinnati, Ohio, determined efforts on the part of a few steel makers to secure a \$40.00 price for basic resulted in two sales by the Valley furnace interests of round tonnages on that basis.

So very little business is being done on straight furnace iron, however, that it is difficult to say just what the market price is.

This is especially true in respect to the foundry and malleable grades.

There has been a marked increase in the amount of resale iron which has changed hands.

This activity is especially notable in the Buffalo district where a very respectable tonnage has been placed in lots of 35 to several of 1000 tons.

This revival has not developed into a real buying movement as yet, for little interest is being shown in iron for 1921, but it does demonstrate the truth of statements previously made regarding the depleted stocks at the foundries.

Most melters, excepting those catering to the machine tool and automobile trade, are actively operating and many have not yet secured an adequate supply of pig iron for the balance of this year.

It is these foundries which are being forced into the market in increasingly large numbers.

Both furnace and foundry coke is somewhat easier and price concessions in some districts are apparent.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

The prices and discounts quoted on this and the following pages, are, for the most part, subject to change without notice. Owing to the unsettled conditions of the markets and the shortage of materials it is practically impossible for any manufacturer to guarantee his prices for any given length of time.

METALS		TIN.		AUGERS.		BEATERS.	
PIG IRON.		Pig tin 45c		Boring Machine 40@40&10%		Carpet. Per doz.	
Northern Fdy. No 2		Bar tin 47½c		Carpenter's Nut.....50%		No. 7 Tinned Spring Wire..\$1 10	
Southern Fdy. No. 2				Hollow.		No. 8 Spring Wire Cop-	
Lake Sup. Charcoal...				Bonney'sper doz. 30 00		pered 1 50	
Malleable				Post Hole.		No. 9 Preston..... 1 75	
				Iwan's Post Hole and Well...30%		Egg. Per doz.	
				Vaughan's, 4 to 9 in.		No. 50 Imp. Dover.....\$1 10	
			per doz. \$14.00		No. 102 " " Tined 1 35	
				Ship.		No. 150 " " hotel 2 10	
				Ford's, with or without		No. 10 Heavy hotel tinned 2 10	
				screwNet list		No. 13 " " " 3 30	
						No. 15 " " " 3 60	
						No. 18 " " " 4 50	
						Hand.	
						8 9 10 12	
						Per doz.\$11 50 13 00 14 75 18 00	
						Moulders.	
						12-inchPer doz. 20 00	
						BELLS.	
						Call.	
						3-inch Nickeled Rotary Bell,	
						Bronzed base....per doz. \$5 50	
						Cow.	
						Kentucky30%	
						Door. Per doz.	
						New Departure Automatic \$7 50	
						Rotary.	
						2 -in. Old Copper Bell... 6 00	
						3 -in. Old Copper Bell,	
						fancy 8 00	
						3 -in. Nickeled Steel Bell 6 00	
						3½-in. Nickeled Steel Bell 6 50	
						Hand.	
						Hand Bell polished List plus 15%	
						White Metal..... " 15%	
						Nickel Plated..... " 5%	
						Swiss " 10%	
						Miscellaneous.	
						Church and School, steel	
						alloys30%	
						Farm, lbs...40 50 75 100	
						Each\$3 00 3 75 5 50 7 25	
						BEVELS, TEE.	
						Stanley's Rosewood handle, new	
						listNets	
						Stanley iron handle.....Nets	
						BINDING CLOTH.	
						Zincd55%	
						Brass40%	
						Brass, plated60%	
						BITS.	
						Auger.	
						Jennings PatternNet	
						Ford Car.....List plus 5%	
						Ford's Ship..... " 5%	
						Irwin35%	
						Russell Jennings.....plus 20%	
						Clark's Expansive33½%	
						Steer's " Small list, \$22 00..5%	
						" " Large " \$26 00..5%	
						Irwin Car.....35%	
						Ford's Ship Auger pattern	
						CarList plus 5%	
						Center10%	
						Countersink.	
						No. 18 Wheeler's..per doz. \$2 25	
						No. 20 " " " 3 00	
						American Snailhead " 1 75	
						" Rose.... " 2 00	
						" Flat.... " 1 40	
						Mahew's Flat.... " 1 60	
						" Snail.... " 1 90	
						Dowel.	
						Russel Jennings.....plus 20%	
						Gimlet.	
						Standard Double Cut Gross \$3 40	
						Nail Metal Single	
						CutGross \$4 00—\$5 00	
						Reamer.	
						Standard Square.....Doz. 2 50	
						American Octagon... " 2 50	
						Screw Driver.	
						No. 1 Common..... 40	
						No. 26 Stanley..... 75	

BLACKING, STOVE. (See Polish)

BLADES, SAW.

Wood.

Disston 30-in.

Nos. 6 66 26
\$9 45 \$10 05 \$9 45

BLOCKS.

Wooden20%
Patent20%

BOARDS.

Stove. Per doz.
24x24 13 60
26x26 16 05
28x28 18 85
30x30 21 30
33x33 25 50
36x36 30 50

Wash.

No. 760, Banner Globe,
(single)per doz. \$5 25
No. 652, Banner Globe,
(single)per doz. 6 75
No. 801, Brass King per doz. 8 25
No. 860, Single—Plain
Pump 6 25

BOLTS.

Carriage, Machine, etc.

Carriage, cut thread, $\frac{3}{8}$ x6
and sizes smaller and
shorter40 & 10%
Carriage, sizes larger and
longer than $\frac{3}{8}$ x6.....+15%
Machine, $\frac{3}{8}$ x4 and sizes
smaller and shorter.....50%
Machine, sizes larger and
longer than $\frac{3}{8}$ x4.....40%
Stove5-10%
Tire40-5%

Mortise, Door.

Gem, iron.....5%
Gem, bronze plated.....5%

Barrel.

CastNets
Wrought"
Wrought, bronzed"

Flush.

Wrought"

Spring.

Wrought"
Wrought, heavy"

Square.

Wrought"

BOXES.

Mail. No.... 2 4 10
Per doz...\$18 00 23 00 29 00

Mitre.

Stanley'sNet Prices
Stearns, No. 2..per doz. \$48 00

BRACES, RATCHET.

Goodell-Pratt No. 408\$4 60
" " No. 410 4 80
" " No. 412 5 00
V. & B. No. 444 8 in.....\$4.65
V. & B. No. 333 8 in..... 4 30
V. & B. No. 222 8 in..... 4 00
V. & B. No. 111 8 in..... 3 50
V. & B. No. 11 8 in..... 3 05

BURRS, RIVETING.

Copper Burrs only..25% above list
Tinner's Iron Burrs only.....30%

BUTTS.

Cast Iron7½%
Wrought Bronze, No. 175 AC
2½\$1 75
Steel, Bright, Narrow 15-7½-5%
Steel, Japanned, Narrow
.....List+65%

CALIPERS.

DoubleNets
Inside and Outside....."
Wing"

CALKS.

Logger's Boot.

(Lufkin R. Co's.), per M..\$7 00

Toe.

Blunt and medium, 1 prong
per 100 lbs.....\$6 20
Sharp, 1 prong, per 100 lbs. 6 70

CANS.

Milk.

Ohio:
Gals..... 5 8 10
Each\$3 65 \$4 45 \$4 70
Gem,
Gals..... 5 8 10
Each\$3 85 \$4 95 \$5 20
Jersey,
Gals..... 5 8 10
Each\$4 15 \$5 60 \$5 90
Holstein,
Gals..... 5 8 10
Each\$4 15 \$5 60 \$5 90

CAN OPENERS.

See Openers.

CAPS, GUN.

See Ammunition.

CARPET STRETCHERS.

See Stretchers.

CARRIERS.

Hay,
Diamond, Regular...each, Nets
Diamond, Sling....."

CARTRIDGES.

See Ammunition.

CASTERS.

Standard—Ball Bearing, 50&10%
Bed40%
Common Plate.
Brass Wheel15%
Iron and porcelain wheels,
new list50%
Philadelphia Plate, new
list50%
Martin's40%

CATCHERS, GRASS.

No. 160S, per doz.....\$12 25
No. 165S, " 14 01

CEMENT, FURNACE.

American Seal, 5 lb. cans, net \$0.45
" " 10 lb. cans, " 90
" " 25 lb. cans, " 1 87
Asbestos, 5 lb. cans..... 45
Pecora, 5 lb. cans..... 45
" 10 lb. cans..... 90
" 25 lb. cans..... 1 87

CHAINS.

Breast Chains.

With Slide.....doz. pairs, 5 50
Without Slide.. " 5 06
Doubleslack.... " 9 25
With Covert Snaps " 6 38

Picture Chains.

Light Brass, 3 ft. per doz. \$1 25
Heavy Brass, 3 ft. " 1 75

Sash Chain.

(Morton's)

Steel, per 100 ft.
0\$2 50
2 3 10
1 3 60

Champion Metal.

0R 5 40
2R 5 60
1R 7 75

Champion Metal.—Extra Heavy.

1H 9 50

Cable Sash Chains.

Steel.....List Net Plus 15%

CHALK, CARPENTERS'.

Blueper gro. \$1 40
Red " 1 40
White " 1 25
Common White School
Crayon " 25c

CHIMNEY TOPS.

In bagsper bag \$1 70

CHECKS, DOOR.

CorbinNet List
Russwin20%

CHISELS.

Cold.
Good quality, $\frac{3}{8}$ in., each \$0 49
" " $\frac{1}{4}$ in., " 0 32

Diamond Point.

V. & B. No. 15, $\frac{1}{4}$ in..... 0 37
V. & B. No. 15, $\frac{1}{2}$ in..... 0 60

FIRMER BEVELLED.

Berg's (Swedish).
 $\frac{1}{2}$ -inch, per doz.....\$ 4 45
1- " " 7 15
1½- " " 10 15
2- " " 17 15
2½- " " 26 95

Round Nose.

V. & B. No. 65, $\frac{1}{4}$ in..... 0 37
V. & B. No. 65, $\frac{1}{2}$ in..... 0 49

SOCKET FIRMER.

Berg's (Swedish).
 $\frac{1}{2}$ -inch, per doz.....\$11 95
1- " " 16 75
1½- " " 23 95
2- " " 35 95

Cape.

V. & B. No. 50, $\frac{3}{8}$ in..... 0 29
V. & B. No. 50, $\frac{1}{2}$ in..... 0 71

CHUCKS, DRILL.

Goodell's, for Goodell's Screw
DriversList less 35-40%
Yankee, for Yankee Screw
Drivers\$6 00

CHURNS.

Anti-Bent Wood,
Gal 5 7 10
Each\$3 00 4 60 4 85
Belle, Barrel65&7½%

Common Dash.

Gal 5 7
Per doz.....\$17 00 19 00

CLAMPS.

Adjustable.
Martin's30%
No. 63, Screw.....20%

Cabinet.

Screw20%

Carpenters'.

Steel Bar...List price plus 25%

Carriage Makers'.

2½".....per doz. 7 00
5" " 14 00
8" " 28 00
12" " 46 00

Quilt Frame.

No. 30 Ball and Socket,
2½" head.....per gross \$13 00
No. 50 Ball and Socket,
3½" head.....per gross 14 50

Hose.

Sherman's, brass, $\frac{3}{8}$ ", per
doz.\$0.48
Double, brass, $\frac{3}{8}$ ", per doz. 1 20

Saw Filers.

Wentworth's, No. 1, \$12.50; No.
2, \$18.25; No. 3, \$16.25.

CLAWS, TACK.

Wood hdl. No. 10...per doz. \$0 95
Forged steel, wood hdl. " 1 75
Solid steel..... " 2 40
Giant " 50

CLEANERS.

Drain.

Iwan's Adjustable.....25%
Iwan's Stationary.....30%

Pot.

Wireper doz. \$0 75

CLEAVERS.

Family.

Beatty's,
inch.... 7 8 9 10
Per doz. \$27 00 29 00 33 00 36 00

CLEVISES.

Malleable10c lb.

CLIPPERS.

Bolt\$2 25&6 00

CLIPS.

Axle65@5%

Damper.

Standardper doz. 70c
Troy " 38c
Hame " 50c

COLLARS, STOVE PIPE.

Lacquered.

Inches 5 6 7
Fancy pattern,
per doz.... 80c 85c \$1 15

COMPASSES.

Carpenters'15%

COPPER—See Metals

COPPERS—Soldering.

Pointed Roofing.

3 lb and heavier...per lb. 37c
2 lb..... " 38c
2½ lb..... " 37c
1½ lb..... " 40c
1 lb..... " 43c

CORD.

Picture.
White Wire60&5%

Sash.

Sampson Spot, No. 7, per
doz.\$24 50
Sampson Spot, No. 7, per
doz.\$29 40

CORKSCREWS

Walker's30%
Williamson's Regular.....35&11%
Williamson's Forged Worm...40%

COTTERS, SPRING

All sizes87½%

COUPLINGS, HOSE.

Brassper doz. \$3 25

CHADLES, GRAIN.

Morgan's Grapevine per doz. \$45 00

<p>CRAYONS—See Chalk.</p> <p>CUTTERS</p> <p>Glass.</p> <p>Woodward40%</p> <p>Meat.</p> <p>Enterprise—Nos. 5 10 12</p> <p>Each.... \$2 50 \$4 25 \$3 75</p> <p>Nos. 22 32</p> <p>" 6 50 8 50</p> <p>Pipe.</p> <p>Saunders', No. 1 2 3</p> <p>Each\$1 85 2 75 6 75</p> <p>Slaw and Kraut. Per doz.</p> <p>4-knife Kraut.....\$20 00-55 00</p> <p>3-knife Kraut,</p> <p>8x27 in.13 00-18 00</p> <p>1-knife Slaw..... 2 50</p> <p>2-knife Slaw 3 00</p> <p>Washer 11 00</p> <p>DAMPERS, STOVE PIPE.</p> <p>Diamond.</p> <p>All sizes....40% from New List</p> <p>DIES AND STOCKS.</p> <p>Discount.....New List</p> <p>DIGGERS.</p> <p>Post Hole.</p> <p>Eureka.....per doz. \$14 50</p> <p>Iwan's Split Handle (Eureka)</p> <p>4-ft. Handle..per doz. 15 00</p> <p>7-ft. " ..per doz. 20 00</p> <p>Iwan's Perfection (Atlas)</p> <p>per doz. 16 50</p> <p>Iwan's Hercules pattern</p> <p>per doz. 18 00</p> <p>See also Augers—Post Hole.</p> <p>Dividers, Wing25%</p> <p>DOOR CHECKS—See Checks</p> <p>DOOR HANGERS—See Hangers</p> <p>DRILLS.</p> <p>Blacksmiths' Twist. (New List)40%</p> <p>Breast.</p> <p>Millers Falls No. 12, each \$46 00</p> <p>" " "112, " 26 00</p> <p>Hand.</p> <p>Goodell's Automatic.</p> <p>Nos. 01 03</p> <p>Per doz. 12 00 14 40</p> <p>Goodell's Single Gear, per doz. 15 75</p> <p>Goodell-Pratt No. 4½, per doz. list, less..... 30%</p> <p>Goodell-Pratt No. 379, per doz. list, less..... 30%</p> <p>Reciprocating.</p> <p>Goodell's.....per doz. 26 00</p> <p>DRIVERS, SCREW.</p> <p>StandardNets</p> <p>Lock Ferrule "</p> <p>Champion "</p> <p>Champion Pattern "</p> <p>Clark's Interchangeable "</p> <p>Edison "</p> <p>Reed's Lightning "</p> <p>Goodell's Spiral "</p> <p>Yankee Ratchet "</p> <p>" Spiral "</p> <p>EAVES TROUGH.</p> <p>50% off Standard List.</p> <p>ELBOWS—Stove Pipe.</p> <p>1-piece Corrugated, Uniform</p> <p>Doz.</p> <p>5-inch\$2 25</p> <p>6-inch 2 30</p> <p>7-inch 2 60</p> <p>Uniform, Collar Adjustable.</p> <p>Doz.</p> <p>5-inch\$2 65</p> <p>6-inch 2 70</p> <p>7-inch 3 00</p>	<p>ELBOWS—Conductor Pipe.</p> <p>Galvanized Steel, Tin and Terne, Round Corrugated.</p> <p>Size. Doz.</p> <p>2-inch50%</p> <p>3-inch50%</p> <p>4-inch50%</p> <p>5-inch50%</p> <p>6-inch50%</p> <p>ENAMEL, STOVE.</p> <p>Iron, Black. Per Gross</p> <p>Peerless Gloss, ¼ pt.....\$16 20</p> <p>" " ½ pt..... 21 00</p> <p>" " ¾ gal..... Per doz.</p> <p>" " 1 gal.....\$12 00</p> <p>" " 1 gal..... 21 00</p> <p>Aluminum Per Gross</p> <p>Peerless, ¼ pt.....\$42 60</p> <p>" ½ pt..... 61 20</p> <p>EMERY, TURKISH.</p> <p>Out of market at present time.</p> <p>Domestic, lb.11½c</p> <p>EYES.</p> <p>Bright Wire Screw—See Woods, B. W.</p> <p>Drifting Pick60, 10 & 5%</p> <p>Hooks and Eyes—</p> <p>Brass, 1½", No. 60, per gross\$3 50</p> <p>Iron, 1½" No. 50, per gross 1 60</p> <p>FASTENERS, STORM SASH.</p> <p>Shroeder'sper doz. \$1 50</p> <p>Sensible " 3 00</p> <p>FILES AND RASPS.</p> <p>Delta</p> <p>Delta30%</p> <p>SwissList plus 25%</p> <p>Utility " net.</p> <p>Nicholson's—</p> <p>American50-7½%</p> <p>Arcade50-7½%</p> <p>Black Diamond40%</p> <p>Eagle50-7½%</p> <p>Great Western50-7½%</p> <p>Kearney & Foot.....50-7½%</p> <p>McClellan50-7½%</p> <p>Nicholson brand40%</p> <p>J. Barton Smith.....50&7½%</p> <p>X-F Swiss Pattern..List+10%</p> <p>Simonds'50%</p> <p>Disston's50%</p> <p>Heller's (American).....50&10%</p> <p>Swiss5%</p> <p>Horse75%</p> <p>FIRE POTS.</p> <p>Clayton & Lambert's—</p> <p>each\$4 00 @ \$6 00</p> <p>Gate Cityeach, 6 25</p> <p>Gemeach, \$6 75 @ 8 50</p> <p>FORKS.</p> <p>Manure.</p> <p>4-tineNew prices</p> <p>GAUGES.</p> <p>Cream Pail.</p> <p>Fairmount.....per doz. \$3 75</p> <p>Marking, Mortise, etc.....Nets</p> <p>Wire.</p> <p>Disston's25%</p> <p>GIMLETS.</p> <p>Discount35@40%</p> <p>GLUE.</p> <p>Bulk.</p> <p>B Amber.....per lb. 35c</p> <p>A White..... " 40c</p> <p>H. S. Amber..... " 32c</p> <p>Liquid.</p> <p>Army & Navy.....40%</p> <p>Le Page's—</p> <p>List "A".....37½%</p> <p>List "B".....33½%</p> <p>List "C".....25%</p> <p>GREASE, AXLE.</p> <p>Wood Boxes.</p> <p>Frazer'sper gro. \$13 00</p> <p>Hub Lightning 7 50</p>	<p>Wood Falls.</p> <p>Frazer's, 15 lb. \$1.00; 25 lb. \$1.50 each.</p> <p>Hub Lightning, 15 lb. 90c; 25 lb. \$1.21 each.</p> <p>Tin Cans.</p> <p>Frazer's</p> <p>1½ lb. per doz.....\$1 75</p> <p>3 lb. per doz..... 3 25</p> <p>GRINDSTONES.</p> <p>Family.</p> <p>Inches.. 7 8 10 12</p> <p>Per doz. 20 50 21 75 26 25 30 50</p> <p>Mounted.</p> <p>Ball Bearing.. 1 2 3</p> <p>Each\$4 75 5 00 5 25</p> <p>GUN WADS.</p> <p>(See Ammunition)</p> <p>GUNS.</p> <p>Iver Johnson Champion Single Barrel Shot Guns....Net Prices</p> <p>Double Barrel, Hammerless "</p> <p>HAFTS, AWL.</p> <p>Brad.</p> <p>Commonper doz. \$0 35</p> <p>Peg.</p> <p>Patent, plain top.. " 80</p> <p>Patent, leather top " 90</p> <p>Sewing.</p> <p>Common " 24</p> <p>Patent " 55</p> <p>HAMMERS, HANDLED.</p> <p>each, net</p> <p>Blacksmiths, Hand, No. 0.</p> <p>26 oz.\$1 35</p> <p>Engineers', No. 1, 26 oz.... 1 35</p> <p>Farriers', No. 7, 7 oz..... 1 45</p> <p>Machinists', No. 1, 7 oz.... 1 06</p> <p>Nail.</p> <p>Vanadium, No. 41½, 16 oz., each\$2 00</p> <p>V. & B., No. 11½, 16 oz., each 1 60</p> <p>Garden City, No. 11½, 16 oz., each 1 35</p> <p>Tinner's Riveting, No. 1, 8 oz., each..... 1 10</p> <p>Shoe, Steel, No. 1, 13 oz. each 1 00</p> <p>Tack</p> <p>Magnetic</p> <p>No. 5, each..... 1 00</p> <p>HAMMERS, HEAVY.</p> <p>Farriers'20%</p> <p>Mason'.</p> <p>Single and Double Face....50%</p> <p>HANDLES.</p> <p>Auger.</p> <p>Common Assorted, per doz. \$0 75</p> <p>Pratt's Adjustable, Nos. 1 & 2, per doz..... 6 00</p> <p>Ives' Adjustable.....per set 1 35</p> <p>Axe30%</p> <p>Chisel.</p> <p>Hickory, Tanged, Firmer, Assorted, 55c; Large, 85c per doz.</p> <p>Hickory, Socket Firmer, Assorted, 70c; Large size, 80c per doz.</p> <p>Coal Pick40%</p> <p>Drifting Pick40%</p> <p>File, assorted, 30c; Large, 35c per doz.</p> <p>Hammer.</p> <p>Adze Eye ..per doz. 40c to \$1 00</p> <p>Blacksmiths' " 45c@1 00</p> <p>Machinists' " 50c@1 00</p> <p>Hay and Manure Fork.....25%</p> <p>Screw Driver.</p> <p>Assorted 6</p> <p>Large 9</p> <p>Shovel and Spade.....25%</p>	<p>HANGERS.</p> <p>Barn Door.</p> <p>U. S. Roller Bearing.....12½%</p> <p>Matchless12½%</p> <p>Warehouse Tandem, No. 4433½%</p> <p>Conductor P.</p> <p>Iwan's Perfection.....45%</p> <p>Eaves Trough.</p> <p>All sizes, 5" or smaller, per gross \$3 80 Net</p> <p>All sizes, larger than 5"per gross 5 00 "</p> <p>Garage Door.</p> <p>Right Angle50&10%</p> <p>Sliding Folding50%</p> <p>Receding50%</p> <p>Parlor Door.</p> <p>Acmeper set, \$3 75</p> <p>Ives' Improved.... " 3 40</p> <p>Lane's Standard... " 3 50</p> <p>Lane's New Model " 3 10</p> <p>Le Roy Noiseless.....40&10%</p> <p>Richards25%</p> <p>Advance40&10%</p> <p>HASPS.</p> <p>Hinge, Wrought...Add 50% to list</p> <p>With Staples—See Staples.</p> <p>HATCHETS.</p> <p>Plumbs, Claw No. 1.....\$1 65</p> <p>Cast Claw, per doz... 1 50@ 1 85</p> <p>Cast Shingling " 1 50@ 1 85</p> <p>Germantown7½%</p> <p>Plumbs, Octagan, Half....\$2 00</p> <p>Plumbs, Broad, No. 1..... 1 90</p> <p>Plumbs, Lathing No. 1..... 1 50</p> <p>HAY KNIVES.</p> <p>See Knives.</p> <p>HAY RACK BRACKETS.</p> <p>Wenzleman's No. 1</p> <p>..... per doz. sets \$18 00</p> <p>Wenzleman's No. 2</p> <p>..... per doz. sets, 19 20</p> <p>HINGES.</p> <p>Blind.</p> <p>Clark's Gravity</p> <p>No. 1.....per doz. sets, \$2 25</p> <p>No. 3..... " " 5 75</p> <p>Gate.</p> <p>Clark's 1 2 3</p> <p>Hgs & Lth, dz. \$5 50 7 00 9 75</p> <p>Hinges only " 4 75 5 50 8 00</p> <p>Latches only, 1 90 1 90</p> <p>Screen Door.</p> <p>1751—3x3doz. \$2 30</p> <p>1753—2½x2½ " 2 15</p> <p>Spring.</p> <p>ChicagoAdd 12½% to list</p> <p>Columbia Dbl. Acting, 40&10&5%</p> <p>Gem25%</p> <p>Ideal Detachable, per gro. \$11 00</p> <p>Matchless40%</p> <p>New Ideaper gro. \$7 20</p> <p>Oxford20%</p> <p>Wrought Iron.</p> <p>Per 100 pairs with screws:</p> <p>Light Strap Hinges, No. 3 \$13 20</p> <p>Heavy Strap Hinges, No. 4 16 50</p> <p>Light T Hinges.....No. 3 12 60</p> <p>Heavy T Hinges.....No. 4 20 60</p> <p>Extra Heavy T Hinges,No. 4 22 50</p> <p>Screw Hook and Strap.</p> <p>6 to 12 in....per 100 lbs. \$7 75</p> <p>14 to 20 in.... " " 7 50</p> <p>22 to 36 in.... " " 7 25</p> <p>Screw Hook and Eye.</p> <p>¾ in.....per doz. pair \$2 00</p> <p>¾ in..... " " 3 50</p> <p>½ in..... " " 5 00</p> <p>HOES.</p> <p>GardenNet</p> <p>HOOKS.</p> <p>Awning, No. 60....per gro. 50%</p> <p>Belt.</p> <p>Brown's70&5%</p> <p>Jones'65&5%</p> <p>Bench.</p> <p>See Stops, Bench.</p>
--	--	---	--

PARERS.		Lineman's Side Cutting.		PUNCHES.		SAWS.	
Apple.		Berg's		Conductors.		Band.	
Goodell'sper doz. \$10 80		(Swedish). In. 6 7 8		No. 22per doz. \$3 00		Disston's 2-in. to 18-in. 10&5%	
Turntable " 11 40		Blk. Pol. Face,		Machineper lb. 25		" 1/4-in to 1 1/4-in...20&10%	
White Mountain 8 40		doz. \$16 70 20 00 23 35		Saddlers'.		Butchers'.	
Reading No. 78 " 11 40		Long Nose Side Cutting.		Common...per doz. 1 50 to 5 00		Disston's No. 2, 14-in.... 18 20	
Potato.		Berg's (Swedish) In. 5 6		Revolving Spring.		" No. 2, 18-in.... 19 50	
Goodell's Saratoga, 10 1/2		Blk. Pol. Face, doz. \$12 25 15 20		Stearns, No. 10...per doz. \$8 00		" No. 2, 22-in.... 20 85	
In., doz. 6 50		Flat and Round Nose.		" No. 40... " 16 00		" No. 7, 16-in.... 20 00	
Goodell's Saratoga, 5 in.,		Berg's (Swedish)		" No. 60... " 19 00		" No. 7, 20-in.... 21 35	
doz. 5 50		Flat, In. 4 6 8		PUTTY.		" No. 7, 24-in.... 23 35	
PICKS.		Blk. Pol. Face.		Strictly pure...per 100 lbs. \$6 00		" No. 7, 28-in.... 26 00	
Adze Eye Ore.....22 1/2%		Doz. \$8 90 13 35 19 65		RAIL.		Compass.	
Drifting and Poll Picks.....22 1/2%		Berg's (Swedish)		Barn Door.		Disston's No. 20 Jackson... 4 30	
Plumbs, Railroad22 1/2%		Round, In. 4 6 8		Matchless, 1-in..... 5c		" No. 40 Sampson 2 60	
Surface22 1/2%		Blk. Pol. Face.		Matchless, 1 1/4-in..... 7c		" No. 377, 10-in.... 6 70	
PINCERS.		Doz. \$11 15 16 30 23 35		Storm King 5c		" No. 9, 10-in.... 7 70	
Carpenters', cast steel,		PLUMBS AND LEVELS.		Sliding Door.		Cross-Cut.	
No.6 8 10 12		See Levels.		Bronzed wrought iron,		Disston's No. 289, 4-ft.... 3 50	
Each\$0 63 .80 1 05 1 15		POINTERS, SPOKE.	per ft. 8 1/4c		" No. 289, 6-ft.... 6 85	
Blacksmiths', No. 10 1 07		Stearns' No. 1....per doz. \$10 00		RAKES.		" No. 289, 8-ft.... 11 85	
Heller'sList plus 10%		" No. 2.... " 12 00		Per doz.		Flooring.	
PINS.		POKERS, STOVE.		Garden.		Disston's D19, 16-in.... 27 15	
Common, per box of 5 gro. \$0 95		Wrt Steel, str't or bent,		Steel, Bow, 12-in. Teeth \$8 50		" D19, 20-in.... 34 35	
Picket.	per doz. \$0 75		Steel, Bow, 14-inch " 9 25		Hand and Rip.	
Fluter, 15-in....per doz. \$1 10		Nickel Plated, coil han'l's " 1 10		Malleable Iron, 12-in. " 4 75		Disston's No. 7, 30-in.... 38 50	
Spiral 1 90		POLISH.		Malleable Iron, 14-in. " 5 00		" No. 7, 32-in.... 43 90	
PIPE.		Metal.		Hay.		" No. 8, 16-in.... 21 35	
Conductor.		Wizard, 6 -oz.. per gross \$21 00		Wood, 10 Teeth.....\$4 00		" No. 8, 20-in.... 25 15	
Plain Round and Round Corru-		" 1/2-pt.. " " 24 00		Lawn.		" No. 8, 24-in.... 29 60	
gated.		" 1/2-gal. " " 12 00		20 Teethper doz. 5 50		" No. 8, 28-in.... 35 45	
29 Gauge50%		" 1 -gal. " " 21 00		RASPS—See Files.		" No. 8, 30-in.... 39 90	
28 "40%		Stove.		RAZORS—SAFETY.		KeystoneNew Nets	
26 "30%		Black Eagle Paste 5 -oz. \$19 20		Gilletteper doz. \$45 00		Keyhole.	
24 "List		" 1/2-lb. 21 60		Auto Strop 45 00		Disston's No. 5..... 3 65	
Galvanized Toncan Metal, Genu-		Black Eagle Liquid, 6-oz.		Gem 8 40		" No. 10..... 4 00	
ine O. H. Iron, Lyonore Metal,		per gross 16 20		Gem (3 doz. lots) " 8 00		" No. 95..... 6 30	
Charcoal Iron and Keystone		Black Kid Paste, 5-oz.		Ever Ready 8 40		Miter Box.	
C. B.		per case 19 20		Ever Ready (3 doz. lots) " 8 00		Disston's No. 4, 4x20-in... 36 15	
Plain Round and Round Corru-		Black Kid Paste, 1/2-lb.. 21 60		RAZOR STROPS		" No. 4, 5x22-in.... 43 25	
gated.		Black Jack Liquid, 1/2-pt.		Star (Honing)50%		" No. 4, 6x22-in.... 47 20	
28 Gauge40%		per gross 16 20		REGISTERS.		Patternmakers'.	
26 "30%		Black Kid Liquid, 1/2-pt.. 24 00		Cast IronList		Disston's 7 1/2-in.... 12 65	
24 "List		Black Kid Liquid, 1/2-pt.. 24 00		Steel and Semi-Steel.....10%		Pruning.	
Square Corrugated A and B Poly-		Black Jack Paste, No. 10		Solid Brass or Bronze Metal		Disston's No. 20..... 20 80	
gon and Octagon.		per gross 16 20	prices on application		Stairbuilders'.	
28 Gauge35%		POWDER.		Baseboard10%		Disston's 6-in. 7 90	
26 "25%		See Ammunition.		Adjustable Ceiling Ventilators 10%		Wood.	
24 "List		PRESSES, FRUIT AND JELLY.		REGISTER FACES.		Disston's No. 111, 30-in... 22 20	
14 and 16-oz. Copper, all de-		Enterprise Manufacturing Co. 25%		Japanned, Bronzed and Plated.		" No. 111, 32-in.... 23 75	
signsList		PRIMERS.		4x6 to 14x14.....10%		" No. 47, 30-in.... 20 25	
Portico Elbows.		See Ammunition.		14x14 to 38x42.....25%		" No. 47, 32-in.... 20 80	
Galvanized and Terne Steel.		PRUNERS.		REVOLVERS.		SAW FRAMES.	
1 -inch35%		Disston's Pole....per doz. \$18 00		Iver Johnson Safety Automatic		Common, plain...per doz. \$1 50	
1 1/4-inch35%		Water's Improved...per doz. 60%		HammerNew Nets		Common, painted... " 2 10	
1 1/2-inch35%		CORK.		Hammerless "		SCISSORS.	
2 -inch25%		Daisyeach \$3 10		I. J. Model 1900..... "		Star60%	
Discounts on Round apply on		Phoenix 1 40		RINGS AND RINGERS.		SCOOPS	
sizes 2-inch to 6-inch, inclusive.		Quick and Easy..... " 2 70		Blair's Rings....per doz. \$ 75		Hubbard Western Pattern Riveted.	
Freight allowed on 15 dozen or		Nail.		Blair's Ringers.. " 1 00		Size.. A B C D	
more, to all points where		Glantper doz. \$14 50		Brown's Ringers.. " 72		1 ..\$16 75 16 00 15 25 14 45	
freight rate does not exceed		Never-Slip 17 00		Brown's Ringers.. " 1 00		4 .. 17 85 17 10 16 35 15 60	
\$1.00 per 100 lbs. Less than		PULLERS.		Hill's Ringers... " 1 00		6 .. 18 65 17 85 17 10 16 35	
15 dozen F. O. B. Factory.		Daisyeach \$3 10		Hill's Ring, boxes " 72		SCRAPERS.	
Terms 30 days net, 2% ten days.		Phoenix 1 40		Major Rings.... " 60		Triangular, No. 6 per doz. \$6 25	
Standard Gauge Conductor Pipe,		Quick and Easy..... " 2 70		Perfect Ringers " 1 50		Road.	
plain or corrugated.		PULLEYS.		Wolverine Rings " 1 65		Cubic ft. 7 5 3	
Not Nested35-5%		Awning—Jap'd10%		Wolverine Ringers " 1 10		With runners, ea. \$7 00 6 50 6 20	
Nested solid40%		Clothes Line10%		Fruit Jar.		SCREEN DOOR HINGES.	
Stove		Hay Fork.		Whiteper lb. 30		Cast irongross \$13 00	
29 Gauge, 3-inch.....\$19 00		Iron Wheel, 5-in..per doz. \$2 50		Key.		Steel " 9 50	
" 4-inch..... 19 50		Wood Wheel, 6-in. " 2 65		Split, roundper doz. \$0 17		SCREWS.	
" 5-inch..... 20 25		Wood Wheel, 6-in.,		Split, square..... " 32		Bench.	
" 6-inch..... 21 00		pass knot 3 00		Ball, round " 40		Iron, ins. 1 1 1/4 1 1/4	
" 7-inch..... 23 00		Snash.		RIVETS.		\$6 82 \$7 87 9 45 16 80	
T-Joint Made up.		CommonNet		Copper Belt Add 15% to list		Wood, white maple, per doz. 6 00	
6-inchper 100 \$60 00		Common-Sense, 2-in.Net		Coppered Iron30%		Hand—Wood50%	
Furnace Pipe.		Empire Pattern, 2-in.Net		Tinners'30%		Hand Rail22%	
Double Wall Pipe and Fit-		IdealNet		Hameper lb. \$0 17		Jack20%	
tings15%		SteelNet		Slotted Clinch...per doz. 60@1 10		Lag or Coach—all sizes, gimlet	
Single Wall Pipe, Round		PUMPS.		Tubular.		pointed45-50%	
Pipe Fittings15%		Spray.		Nos. 1 and 2 assorted sizes,		Saw—Centennial,	
Galvanized and Black Iron		Midget Junior....per doz. \$3 75		50 in boxdoz. 75c		Nos. 1 2 3 4	
Pipe, Shoes, etc.....10%		New Misty " 6 00		Nos. 1 and 2 assorted sizes,		Per doz....47c 55c 75c 90c	
PLANES.		Crescent " 6 50		10 in boxdoz. 1 40		Wood.	
Stanley Iron Bench.....Net		ROPE.		1st Quality18 1/2c		F. H. Bright.....67 1/2-20%	
PLATE, TIN.		See Sets.		No. 217 1/2c		F. H. Blued.....65-20%	
See Metals in Column 1.		Cotton.		Pure Manila.		F. H. Jap'd.....65-20%	
PLIERS.		1/4, 5-16 in. Com. on reels,		1st Quality, base per lb. 28 1/4c		F. H. Brass.....57 1/2-20%	
F. & B. No. 6each 0 64		per lb.85c		Hardware Grade...per lb. 27 1/4c		R. H. Brass.....35 1/2-20%	
" No. 7 Gas 0 67		1/4, 5-16 in. Com. in coils,		SCYTHES.		Clipper, Grass ...per doz. \$13 50	
" Double Duty 106.... 0 63		per lb.85c		Clipper, Dutchman... " 13 00			
" Nut, No. 3..... 0 70							

SETS.		SPRINKLERS, LAWN.		TAPES, MEASURING.		WARE.	
Nail.		Stearns' No. 1....per doz. \$11 50		Asses' Skin.....List&40%		Glue Pots.	
Square head.....per doz. 1 84						TinnedAdd 15% to list	
Cup point, knurled " 1 78						Enameled30%	
Rivet.		SQUARES.		THERMOMETERS.		WASH BOARDS—See Boards.	
Farmers'per doz. 2 50		Steel and Iron.....Nets new list		Tin Case.....per doz. 80c@ \$ 1 25		WASHERS.	
Tinnings' 3-4 5 75		(Add for bluing, \$2.00 per doz. net)		Wood Back... " \$2 00@ 12 00		Standard O. G. cast iron, per	
00-0 8 75		Mitre		Glass " 12 00		lb.3%	
Saw.		Try and Bevel.....		Cow—See "Chains."		Wrought steel in 5-lb. boxes,	
Aiken's Pattern...per doz. \$6 50		Try and Miter.....				per lb.:	
Disston's Monarch " 7 20		Fox'sper doz. \$6 00		Bale.		In 3/16 1/4 5/16 3/8 1/2	
Disston's X-cut... " 13 50		Winterbottom's70%		Single Loop, carload		13c 16c 15c 13c 12c	
Leach's " 30		SQUEEZERS, LEMON.		lots75&7%		%	
Nash's Hand " 3 15		Common Woodper doz. \$0 70		Single Loop, less than		11 1/2c 11c 11c 11c	
Nash's X-cut " 4 20		Porcelain Lined, Wood " 1 25		car lots70&15%			
Stillman's Lever... " 1 30		Boss, malleable iron " 1 20		Tools, Saw.		WEDGES.	
Stillman's X-cut... " 2 50		Iron frame, porc'n		Disston's Universal10%		Axper doz. Nets	
Whiting Pattern, " 7 50		bowl				Gallingper lb. Nets	
Eccentric Anvil, " 1 30		Iron frame, glass " 2 35		TRAPS.		Sawper lb. 3 1/4	
Hand No. 395, " 1 30		Little Giant, tin'd " 4 00		Game with Chains, Per doz.		WEANERS.	
N. P. Morrill Pat- " 14 50		Iron " 4 00		Victor No. 1.....\$2 01		Calif.	
SHARPENERS, SKATE.		Drum, japanned " 3 60		Oneda Jump No. 1..... 2 75		Fuller's, per doz. \$2 00 to \$2 50	
Diamondper doz. \$1 60		Drum, nickel plated " 4 50		Newhouse No. 1..... 5 62		Tyler's Safety, per	
Perfect 1 20		Blind.		Mouse and Rat. Net per gross		doz. 1 85 to 2 40	
SHEARS.		Barbedper lb. 21@22c		Out O'Sight Mouse.....\$8 00		Carroll's, per doz. 3 00 to 3 75	
Nickel Plated, Straight, 6" \$12 90		Butter, Tub..... " 16@19c		" Rat 15 00		Hoosier, per doz. 3 50 to 4 60	
" " " 7" 14 85		Fence—		" Mole100 00		Shaw Perfected.. 3 00 to 3 75	
" " " 8" 16 30		Polishedper 100 lbs. \$5 45		No. 44 Pocket Gopher... 20 00			
Japanned, Straight 6" 11 00		Galvanized 6 15		Victor Mouse 2 60			
" " " 7" 12 40		Netting.		Hold Fast Mouse 2 60			
" " " 8" 13 80		Galvanized.....per 100 lbs. 6 50		Victor Rat 11 00			
Tinnings—See Snips.		Wrought.		Hold Fast Rat..... 11 00			
SHEAVES, SLIDING DOOR.		Wrought Staples, Hasps and		Official Rat 13 50			
Common. 3 4 5		Staples, Hasps, Hooks and		Wood Choker Mouse, 4			
Inches \$1 40 1 75 2 40		Staples, and Hooks and		Holes 11 00			
Hatfield's.		Staples50&10%		TROWELS.			
Per set \$1 80 2 10 2 75 25		Extra heavy35%		Brick.			
SHELLS—See Ammunition.		STEELYARD.		Clover Leaf30%			
SHELLERS, CORN		Discount 25%.		Brado's15&5%			
Unionper doz. \$6 75		STONES.		Disston's30%			
SHIELDS.		Axe.		Rose'sNet			
Expansion Bolt Shields.....60%		Hindustanper lb. New Nets		Plasterers.			
Shoes.		More Grit..... " "		Clover Leaf40%			
Conductor60%		Washita " "		Disston's25%			
SHOT—See Ammunition.		Emery.		W. & McP.Net			
SHOVELS AND SPADES.		No. 126.....per doz. New Nets		TRUCKS.			
Coal.		Oil—Mounted.		Bageach \$3 75			
Hubbard's		Arkansas Hard		Warehouse or store,			
No. A B C D		No. 7.....per doz. New Nets		No. 1, each.....\$24 50			
1 \$16 00 15 10 14 45 13 70		Arkansas Soft.. " "		No. 2, " 22 50			
2 16 35 16 60 14 85 14 10		Lily White..... " "		TUBS, WASH.			
3 16 75 16 00 16 25 14 45		Queer Creek.... " "		Standard, Wood. Ex.			
4 17 10 16 35 16 60 14 85		Washita No. 717 " "		Nos..... 3 2 1 large			
Post Drain & Ditching.		Oil—Unmounted.		Per doz. \$9 50 11 25 12 75 15 50			
Hubbard's		Arkansas Hard, per lb. New Nets		Galvanized.			
Size A B C		Arkansas Soft.. " "		No. 1 2 3			
14"\$17 15 16 40 15 65		Lily White..... " "		Per doz.13 75 15 95 18 60			
16" 17 50 16 75 16 00		Queer Creek.... " "		TWINE.			
18" 17 85 17 10 16 35		Washita " "		-ply Cotton Wrapping.....\$.85			
20" 18 20 17 45 16 70		Seythe.		4 " Extra Wrapping			
22" 18 55 17 80 17 05		Black Diamond per gro. New Nets		4 " Hvy. Wrapping			
Snow.		Crescent " "		4 " Wrapping on tubes			
Hubbard Special,		Green Mountain " "		3 " cones.....			
Long Handle\$10 00		LaMoille " "		India Hemp, 1/2-lb. balls,			
D-Handle 11 00		Extra Quinne- bog " "		No. 4 1/236c			
Sidewalk Scraper..... 6 50		Red End " "		No. 635c			
Alaska Steel		STOPS, BENCH.		No. 833c			
D-Handleper doz. \$3 50		No. 10 Morrill pat- ternper doz. \$11 00		No. 1833c			
Long Handle 3 00		No. 11 Stearns pat- tern 10 00		2-ply Jute, 1 1/2-lb. balls, lb. 49c			
SINKS.		No. 15 Smith pattern 7 00		Seals.			
Cast Iron.		STOPPERS, FLUE.		Soft.....per lb.....Net			
Painted, 16x24.....Net		Commonper doz. \$1 10		Med. " "			
Enameled, White, 16x24... "		Gem, flat, No. 3.... 1 00		Hard " "			
Wrought Steel.		Gem, No. 1..... 1 10		Staging, 1/4-lb. ball, size 21 " 24			
Painted, 16x24 "		STOVE PIPE—See pipe.		" " " 27 " "			
SLEDGES—See Hammers.		STOVE BOARDS—See Boards.		Bagging, 1/4-lb. ball, size			
SNAPS, HARNESS.		STOVE POLISH—See Polish.		3-ply "B" in hanks.....			
Covered Spring.....Add 30%		STRAPS.		4- " "B" " "			
Judd's Pattern Add 33 1-6% to list		SKATEper doz. 85c&1 20		3- " "A" " "			
SNATHS.		STRETCHERS.		3- " Silver Finish in hanks "			
Double Ring, Bush...per doz. \$9 75		Carpet.		FOODER OR LATH.			
Patent Loop, Bush.. " 10 00		Bullard'sper doz. \$3 90		130 strand			
Patent Loop, Grass.. " 8 75		Excelsior 5 25		VISES.			
SNIPS, TINNERS'.		Malleable Iron.... 70		No. 700, Hand,			
Clover Leaf.....40&10%		Perfection 6 30		Inches 4 1/2 5 5 1/2			
National40&10%		King 4 50		Doz.\$11 15 13 00 14 85			
Star50%		Wire.		No. 701, In. 5 6			
SOLDER—See Metals.		O. S. Elwood, No. 1 per doz. Nets		No. 1, Genuine Wentworth,			
SPRINGS, DOOR		O. S. Elwood, No. 2 " "		Noiseless Saw...per doz. 15 00			
Perfect.		Malleable Iron.....per lb. \$0 10		Noiseless Saw...per doz. 22 50			
Nos. 2 3 4 5 6 7		Wrought Steel.....per gro. 4 50		No. 3, Genuine Wentworth,			
Per doz. 55c 60c 65c 75c 90c 1 00</td>							

ADVERTISERS' INDEX

ALPHABETICAL LIST

Ajax Bracket and Outlet Co.....	52
American Sheet & Tin Plate Co.....	51
American Steel & Wire Co.....	57
Ashton Mfg. Co.....	53
Basman Co., Inc., A. M.....	52
Berger Brothers Co.....	52
Berna Otto.....	52
Bertsch & Co.....	54
Brier Hill Steel Co.....	51
Bullard & Gormley Co.....	59
Burgess Soldering Furnace Co.....	53
Burton Co., W. J.....	52
Caldwell Mfg. Co.....	57
Central Stove & Furnace Repair Co..	11
Chatsworth Mfg. Co.....	57
Clark-Smith Hardware Co.....	53
Clayton & Lambert Mfg. Co.....	53
Cleveland & Buffalo Transit Co.....	56
Cleveland Castings & Pattern Co....	11
Coes Wrench Co.....	56
Cope-Swift Co., Inc.....	11
Cortright Metal Roofing Co.....	51
Dreis & Krump Mfg. Co.....	54
Fanner Mfg. Co.....	11
Farris Furnace Co.....	4
Friedley-Voshardt Co.....	53
Hall-Neal Furnace Co.....	6
Harrington & King Perforating Co....	53
Hart & Cooley Co.....	9
Heller Bros. Co.....	57
Hemp & Co.....	49
Henry Furnace & Fdy. Co.....	3
Hessler Co., H. E.....	52
Hess-Snyder Co.....	5
Howes Co., S. M.....	11
Hussey & Co., C. G.....	52
Hyfield Mfg. Co.....	56
Kimball Bros. Co.....	49
Knoddler Frederick J.....	54
Lufkin Rule Co.....	57
Manny Heating Supply Co., The....	9
Marsh Lumber Co.....	10
May-Flebege Furnace Co.....	4
Meyer & Bro. Co. F.....	10
Michigan Safety Furnace Pipe Co....	7
Milwaukee Corrugating Co.....	60
Niagara Machine & Tool Works.....	54
Northwestern Stove Repair Co.....	11
Peck, H. E.....	49
Peerless Foundry Co.....	6
Quick Meal Stove Co.....	2
Quincy Pattern Co.....	11
Rock Island Mfg. Co.....	57
Roesch, Geo. E.....	49
Ross-Gould.....	49
Rybolt Heater Co.....	5
Ryerson & Son, Joseph T.....	51
Safety Interlocking Stove Pipe Co...	6
Scheible-Moncrief Heater Co.....	1
Schill Bros. Co.....	4
Schwab & Sons Co., R. J.....	6
Standard Furnace & Supply Co.....	2
Standard Ventilator Co.....	52
Stanley Rule & Level Plant.....	56
Stearns Register Co.....	8
St. Louis Technical Institute.....	49
Sullivan-Geiger Co.....	11
Sykes Co., The.....	52
Towner, F. A.....	49
Tubular Heat & Vent. Co.....	5
Turner Brass Works.....	53
Tuttle & Bailey Mfg. Co.....	9
XXth Century Heat & Vent. Co.....	5
Vedder Pattern Works.....	11
Vikins Shear Co.....	54
Whitney Mfg. Co., W. A.....	54
Whitney Metal Tool Co.....	54

CLASSIFIED INDEX

Asbestos Sheets	
Manny Heating Supply Co.,	Chicago, Indiana
Bale Ties	
American Steel & Wire Co.,	Chicago, Ill.
Bolts and Nuts	
Ryerson & Son, Joseph T.,	Chicago, Ill.
Brackets	
Ajax Bracket and Outlet Co.,	Cleveland Heights, Ohio
Brakes—Cornice	
Bertsch & Co.,	Cambridge City, Ind.
Dreis & Krump Mfg. Co.,	Chicago, Ill.
Niagara Machine & Tool Works,	Buffalo, N. Y.
Brass and Copper	
Hussey & Co., C. G.,	Pittsburgh, Pa.
Castings—Malleable	
Fanner Mfg. Co.,	Cleveland, Ohio
Ceiling—Metal	
Burton Co., W. J.,	Detroit, Mich.
Friedley-Voshardt Co.,	Chicago, Ill.
Milwaukee Corrugating Co.,	Milwaukee, Wis.
Chaplets	
Fanner Mfg. Co.,	Cleveland, Ohio
Coal Chutes	
Peerless Foundry Co.,	Indianapolis, Ind.
Cornices	
Burton Co., W. J.,	Detroit, Mich.
Friedley-Voshardt Co.,	Chicago, Ill.
Milwaukee Corrugating Co.,	Milwaukee, Wis.
Cut-Offs—Rain Water	
Sullivan-Geiger Co.,	Indianapolis, Ind.
Dampers	
Howes Co., The S. M.,	Boston, Mass.
Eaves Trough	
Berger Bros. Co.,	Philadelphia, Pa.
Burton Co., W. J.,	Detroit, Mich.
Clark-Smith Hardware Co.,	Peoria, Ill.
Milwaukee Corrugating Co.,	Milwaukee, Wis.
Elevators	
Kimball Bros. Co.,	Council Bluffs, Iowa
Fence Gates	
American Steel & Wire Co.,	Chicago, Ill.
Files	
Heller Bros. Co.,	Newark, N. J.
Flux—Aluminum	
Roesch, Geo. E.,	Aurora, Ill.

Furnaces—Soldering

Ashton Mfg. Co.,	Newark, N. J.
Bernz, Otto,	Newark, N. J.
Burgess Soldering Furnace Co.,	Columbus, Ohio
Clayton & Lambert Mfg. Co.,	Detroit, Mich.
Quick Meal Stove Co.,	St. Louis, Mo.
Turner Brass Works,	Sycamore, Ill.

Hammers.

Stanley Rule & Level Plant,	New Britain, Conn.
-----------------------------	--------------------

Handles—Boiler

Berger Bros. Co.,	Philadelphia, Pa.
-------------------	-------------------

Heaters—School Room

Monroe Foundry & Furnace Co.,	Monroe, Michigan
Peerless Foundry Co.,	Indianapolis, Ind.
Standard Furnace & Supply Co.,	Omaha, Neb.

Heaters—Warm Air

Farris Furnace Co.,	Springfield, Mass.
Hall-Neal Furnace Co.,	Indianapolis, Ind.
Henry Furnace & Fdy. Co.,	Cleveland, Ohio
Hess-Snyder Co.,	Massillon, Ohio
Mahoning Foundry Co.,	Youngstown, Ohio
Manny Heating Supply Co.,	Chicago, Indiana
May-Flebege Furnace Co.,	Newark, Ohio
Peerless Foundry Co.,	Indianapolis, Ind.
Rybolt Heater Co.,	Ashland, Ohio
Scheible-Moncrief Heater Co.,	Cleveland, Ohio
Schill Bros. Co.,	Crestline, Ohio
Schwab & Sons Co., R. J.,	Milwaukee, Wis.
Standard Furnace & Supply Co.,	Omaha, Neb.
Tubular Heating & Ventilating Co.,	Philadelphia, Pa.
XXth Century Heating & Ventilating Co.,	Akron, Ohio

Horse Shoes

American Steel & Wire Co.,	Chicago, Ill.
----------------------------	---------------

Jobbers—Hardware

Bullard & Gormley Co.,	Chicago, Ill.
Clark-Smith Hdw. Co.,	Peoria, Ill.

Lath—Expanded Metal

Milwaukee Corrugating Co.,	Milwaukee, Wis.
----------------------------	-----------------

Machinery—Culvert

Bertsch & Co.,	Cambridge City, Ind.
----------------	----------------------

Machines—Crimping

Bertsch & Co.,	Cambridge City, Ind.
Niagara Machine & Tool Wks.,	Buffalo, N. Y.

Machines—Razor Blades

Hyfield Mfg. Co.,	New York, N. Y.
-------------------	-----------------

Machines—Stove Pipe

Hemp & Co.,	St. Louis, Mo.
-------------	----------------

Machines—Tinsmith

Bertsch & Co.,	Cambridge City, Ind.
Dreis & Krump Mfg. Co.,	Chicago, Ill.
Hemp & Co.,	St. Louis, Mo.
Knoddler, Frederick J.,	Philadelphia, Pa.
Niagara Machine & Tool Wks.,	Buffalo, N. Y.

Mailing Lists

Ross-Gould,	St. Louis, Mo.
-------------	----------------

Meat Smokers

Chatsworth Mfg. Co.,	Chatsworth, Ill.
----------------------	------------------

Metals—Perforated

Harrington & King Perforating Co.,	Chicago, Ill.
------------------------------------	---------------

Mitters

Friedley-Voshardt Co.,	Chicago, Ill.
------------------------	---------------

Nails—Slatting

Hussey & Co., C. G.,	Pittsburgh, Pa.
----------------------	-----------------

Nails—Wire

American Steel & Wire Co.,	Chicago, Ill.
----------------------------	---------------

Ornaments—Sheet Metal

Friedley-Voshardt Co.,	Chicago, Ill.
------------------------	---------------

Patterns—Stove

Cleveland Castings Pattern Co.,	Cleveland, Ohio
Cope-Swift Co., Inc.,	Detroit, Mich.
Quincy Pattern Co.,	Quincy, Ill.
Vedder Pattern Works,	Troy, N. Y.

Pipes and Fittings—Furnace

Henry Furnace & Fdy. Co.,	Cleveland, Ohio
Howes Co., S. M.,	Boston, Mass.
Manny Heating Supply Co.,	Chicago, Indiana
Meyer & Bro. Co., F.,	Peoria, Ill.
Michigan Safety Furnace Pipe Co.,	Detroit, Mich.
Safety Interlocking Stove Pipe Co.,	Mt. Pleasant, Iowa
Standard Furnace & Supply Co.,	Omaha, Neb.
Stearns Register Co.,	Detroit, Mich.

Pipe and Fittings—Stove

Hemp & Co.,	St. Louis, Mo.
Howes Co., S. M.,	Boston, Mass.
Meyer & Bro. Co., F.,	Peoria, Ill.
Michigan Safety Furnace Pipe Co.,	Detroit, Mich.
Safety Interlocking Stove Pipe Co.,	Mt. Pleasant, Iowa
Sullivan-Geiger Co.,	Indianapolis, Ind.

Pipe—Conductor

Berger Bros. Co.,	Philadelphia, Pa.
Burton Co., W. J.,	Detroit, Mich.
Clark-Smith Hdw. Co.,	Peoria, Ill.
Friedley-Voshardt Co.,	Chicago, Ill.
Hussey & Co., C. G.,	Pittsburgh, Pa.

Plumbs and Levels

Stanley Rule & Level Plant,	New Britain, Conn.
-----------------------------	--------------------

Posts—Steel Fence

American Steel & Wire Co.,	Chicago, Ill.
----------------------------	---------------

Punches

Bertsch & Co.,	Cambridge City, Ind.
Niagara Machine & Tool Wks.,	Buffalo, N. Y.
Whitney Metal Tool Co.,	Rockford, Ill.
Whitney Mfg. Co., W. A.,	Rockford, Ill.

Ranges—Combination Gas & Coal

Quick Meal Stove Co.,	St. Louis, Mo.
-----------------------	----------------

Rasps Heller Bros. Co., Newark, N. J.	Sheets—Planished Sykes Co., The, Chicago, Ill.	Tinplate American Sheet & Tin Plate Co., Pittsburgh, Pa. Knoodler, Frederick J., Philadelphia, Pa.
Register Shields Hall-Neal Furnace Co., Indianapolis, Ind.	Sheets—Steel Ryerson & Sons, Joseph T., Chicago, Ill.	Tools—Carpenters Lufkin Rule Co., Saginaw, Mich. Stanley Rule & Level Plant, New Britain, Conn.
Registers—Warm Air Hart & Cooley Co., New Britain, Conn. Henry Furnace & Fdy. Co., Cleveland, Ohio Manny Heating Supply Co., Chicago, Indiana Standard Furnace & Supply Co., Omaha, Neb. Stearns Register Co., Detroit, Mich. Tuttle & Bailey Mfg. Co., Chicago, Ill.	Skylights Burton Co., W. J., Detroit, Mich.	Tools—Sheet Metal Bertsch & Co., Cambridge City, Ind. Dreis & Krump Mfg. Co., Chicago, Ill. Niagara Machine & Tool Wks., Buffalo, N. Y. Ryerson & Son, Joseph T., Chicago, Ill. Viking Shear Co., Erie, Pa. Whitney Mfg. Co., W. A., Rockford, Ill. Whitney Metal Tool Co., Rockford, Ill.
Repairs—Furnace Central Stove & Furnace Repair Co., Chicago, Ill. Hessler Co., H. E., Syracuse, N. Y. Northwestern Stove Repair Co., Chicago, Ill.	Solder—Aluminum Roesch, Geo. E., Aurora, Ill.	Tools—Tinsmiths Bertsch & Co., Cambridge City, Ind. Dreis & Krump Mfg. Co., Chicago, Ill. Howes Co., S. M., Boston, Mass. Knoodler, Frederick J., Philadelphia, Pa. Niagara Machine & Tool Wks., Buffalo, N. Y. Ryerson & Son, Joseph T., Chicago, Ill. Viking Shear Co., Erie, Pa. Whitney Mfg. Co., W. A., Rockford, Ill. Whitney Metal Tool Co., Rockford, Ill.
Repairs—Stove & Furnace Central Stove & Furnace Repair Co., Chicago, Ill. Hessler Co., H. E., Syracuse, N. Y. Northwestern Stove Repair Co., Chicago, Ill.	Soldering—Furnaces Ashton Mfg. Co., Newark, N. J. Burgess Soldering Furnace Co., Columbus, Ohio Clayton & Lambert Mfg. Co., Detroit, Mich. Quick Meal Stove Co., St. Louis, Mo. Turner Brass Works, Sycamore, Ill.	Torches Ashton Mfg. Co., Newark, N. J. Bernz, Otto, Newark, N. J. Burgess Soldering Furnace Co., Columbus, Ohio Clayton & Lambert Mfg. Co., Detroit, Mich. Quick Meal Stove Co., St. Louis, Mo. Turner Brass Works, Sycamore, Ill.
Rolls—Forming Bertsch & Co., Cambridge City, Ind. Niagara Machine & Tool Wks., Buffalo, N. Y.	Specialties—Hardware Caldwell Mfg. Co., Rochester, N. Y. Chatsworth Mfg. Co., Chatsworth, Ill. Heller Bros. Co., Newark, N. J. Hessler Co., H. E., Syracuse, N. Y. Hyfield Mfg. Co., New York, N. Y. Lufkin Rule Co., Saginaw, Mich. Stanley Rule & Level Plant, New Britain, Conn.	Transit Companies Cleveland & Buffalo Transit Co., Cleveland, Ohio
Roof—Flashing Hessler Co., H. E., Syracuse, N. Y.	Stars—Hard Iron Cleaning Fanner Mfg. Co., Cleveland, Ohio	Trimnings—Stove Fanner Mfg. Co., Cleveland, Ohio
Roofing—Iron and Steel American Sheet & Tin Plate Co., Pittsburgh, Pa. Brier Hill Steel Co., Youngstown, Ohio Burton Co., W. J., Detroit, Mich. Cortright Metal Roofing Co., Philadelphia, Pa. Friedley-Voshardt Co., Chicago, Ill. Milwaukee Corrugating Co., Milwaukee, Wis. Sykes Co., The, Chicago, Ill.	Statuary Friedley-Voshardt Co., Chicago, Ill.	Ventilators Basman Co., Inc., A. M., Detroit, Mich. Berger Bros. Co., Philadelphia, Pa. Friedley-Voshardt Co., Chicago, Ill. Standard Ventilator Co., Lewisburg, Pa.
Rubbish Burners Hart & Cooley Co., New Britain, Conn.	Stock Waterers Rock Island Mfg. Co., Rock Island, Ill.	Ventilators—Ceiling Hart & Cooley Co., New Britain, Conn. Tuttle & Bailey Mfg. Co., Chicago, Ill.
Rules Lufkin Rule Co., Saginaw, Mich.	Stoves and Ranges Quick Meal Stove Co., St. Louis, Mo. Schill Bros. Co., Crestline, Ohio	Vises Rock Island Mfg. Co., Rock Island, Ill.
Sash Balances Caldwell Mfg. Co., Rochester, N. Y.	Stoves—Gasoline and Kerosene Quick Meal Stove Co., St. Louis, Mo.	Water Outlets Ajax Bracket and Outlet Co., Cleveland Heights, Ohio
Schools — Sheet Metal Pattern Drafting St. Louis Technical Institute, St. Louis, Mo.	Stove Pipe Reducer Sullivan-Geiger Co., Indianapolis, Ind.	Wire American Steel & Wire Co., Chicago, Ill.
Screens—Perforated Metal Harrington & King Perforating Co., Chicago, Ill.	Tacks, Staples, Spikes American Steel & Wire Co., Chicago, Ill.	Wood Faces Marsh Lumber Co., Dover, Ohio
Sheets—Black and Galvanized American Sheet & Tin Plate Co., Pittsburgh, Pa. Brier Hill Steel Co., Youngstown, Ohio Knoodler, Frederick J., Philadelphia, Pa. Sykes Co., The, Chicago, Ill.	Tapes Lufkin Rule Co., Saginaw, Mich.	Wrenches Coes Wrench Co., Worcester, Mass.
Sheets—Blue Annealed Brier Hill Steel Co., Youngstown, Ohio	Tiles and Shingles—Metal Burton Co., W. J., Detroit, Mich. Cortright Metal Roofing Co., Philadelphia, Pa. Milwaukee Corrugating Co., Milwaukee, Wis.	
	Tin—Perforated Harrington & King Perforating Co., Chicago, Ill.	

ADVERTISING
is the power of an
idea multiplied.

Other powers
lose by expansion.
Steam is power
only when con-
fined. Electricity
radiated and dif-
fused becomes
nothing. Sound
dies with distance.
Great suns pale
into invisible
stars, and the
power of light
itself is lost in in-
finite space. But
the strange power
of advertising in-
creases by expan-
sion. Diffusion is
its life. It grows
by what it im-
parts.

The advertised
idea, to become a
power, must be genu-
ine, vital, and related
to the function of a
meritorious business;
and the means of its
furtherance must be
well chosen.

To choose well the
means for the further-
ance of your adver-
tised idea, in order
that it may become a
power, in order that
you may show its genu-
ineness as a vital
factor of your busi-
ness, is not hard.

A close perusal from
cover to cover of
this week's issue of
**AMERICAN ARTISAN
AND
HARDWARE RECORD**
620 So. Michigan Ave.
Chicago, Illinois
will disclose abundant
evidence of this fact.

WANTS AND SALES

For paid yearly subscribers, **AMERICAN ARTISAN AND HARDWARE RECORD** will insert under this head advertisements of not more than fifty words **WITHOUT CHARGE**. Employers wishing to secure employes, parties desiring to purchase or sell business, secure partners, or to exchange, etc., will find that these pages offer excellent opportunities to satisfy their wants. Clerks and tinsmiths looking for situations will find it to their advantage to use these columns. Those who respond to these announcements please mention that they "READ THE ADVERTISEMENT IN AMERICAN ARTISAN AND HARDWARE RECORD."

BUSINESS CHANCES

Lightning Rods—Big profits and quick sales to live dealers selling "DIDDLE'S UNIVERSAL RODS." Our copper tests 99.96% pure. Prices are right—get our agency. L. K. Diddle Company Marshfield, Wisconsin. 18-ufn

For Sale—Tin shop and radiator repair shop. Doing good business. There is more work than can be taken care of. Only shop. Population 800; nine mills; county seat nearest town. Fine country to draw from. Good churches and schools. C. & O. Railroad. A bargain at \$575.00. Reason for selling, poor health. Earl Poorman, P. O. Lock Box 144, Fulton, Indiana. 16-3t

For Sale—Plumbing and heating business, automobiles, tractors and supplies with fine opening for hardware, as leading store is closing out. Fine new building on corner of two best streets in northern Illinois. Small city. This is a real opportunity. Write for details. Address B-43, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 16-3t

Wanted—A partner in a going furnace and sheet metal business, doing a large volume. You must be a mechanic and have at least \$2,000. A wonderful opportunity for the right man. The business is located in a prosperous central Nebraska town of 15,000. Address B-41, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 16-3t

For Sale at a Bargain—Sheet metal shop and complete set of tinner's tools, including an eight foot cornice brake; also radiator repair equipment. Located in a town of eight hundred inhabitants surrounded by the best farming community in central Iowa. Plenty of work at all times of the year. Doing a splendid, profitable business. A snap for the right man and a chance for a live wire to make good. F. A. Holmes, Box 273, Dallas Center, Iowa. 18-3t

Business Chance—Will sell or exchange for stock of hardware, 30 acre improved farm, bordered on east by fine lake, west by State Trunk highway. It is one-half mile to city limits; county seat. 60 acres under high cultivation, balance timber. 10 room modern house; two large barns; two large buildings for machinery, granary, hen house, blacksmith shop, ice house and slaughter house. Good orchard. Triple Hardware Company, Crandon, Wisconsin. 16-3t

Over Stock to Clean Out—Two White Lily De Lux cylinder electric washers, \$92.50; two Wayne Copper tub rocker electric washers (latest model), \$105.00; three Eureka Electric vacuum cleaners, \$29.50; one dozen 3/4" Glauber compression stops, \$15.00; one bbl. red barn paint, \$1.00 gallon; 1,000 lbs. No. 5 hardware wire at 5c; 500 lbs. 1/2" round iron at 5c; 5,000 ft. R. W.-Shareon and Allith Frouty square track, 19c; 100 dozen hangers for same—500 brackets; two 350 lb. Swedish cream separator, \$29.75; two 500 lb. Swedish Cream separator, \$35.00; one 6 H.P. Bates and Edmonds gas engine with magneto, \$133.00. Above all high grade goods, fully warranted. Vandervoort Hardware Company, Lansing, Michigan. 16-3t

BUSINESS CHANCES

For Sale—Tinner and plumbing shop at Wheaton, Illinois. This is a good chance for either a tinner or plumber or both. There is plenty of work for two men at all times. R. D. Grieves, Wheaton, Illinois. 17-3t

Wanted to Buy—Small hardware store, in or near Chicago. No objection to machine shop in connection. Address B-44, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 16-3t

Wanted—A reliable partner, must be a tinner, in retinning, radiator and fender works. Necessary capital, \$3,000. Address B-47, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 17-3t

For Sale—Store and stock consisting of hardware, agricultural implements, automobiles, pumps, windmills and gasoline engines. Do also tinning and general repairing. Illinois town. Stock will invoice about \$8,000. Will sell stock and rent store if necessary. Village is of about 1,000 people with a good farming community surrounding. Tire factory just begun. Have city water and have begun preliminary proceedings for a sewer system to be put in next year. Address B-48, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 17-3t

HELP WANTED

Wanted — Tanners. Steady work to right men. C. E. Arnold, 823 Davis Street, Evanston, Illinois. 16-3t

Wanted at Once—A good plumber. Steady work all winter. Adam Auch and Son, Menno, South Dakota. 18-3t

Wanted at Once—Good all around tinner for steady job the year around. A. W. Wagner, Woodstock, Illinois. 17-3t

Wanted—Good all around tinner and furnace man. Steady job. \$42.00 per week. Paul Groeschel, Marshall, Missouri. 17-3t

Wanted—A combination tinner who has done some plumbing. Steady work and wages according. Eckhard Mercantile Company, Alton, Illinois. 18-3t

Wanted—Two or three good tanners and furnace men. Union shop. Wages good. Southern Illinois. Write to R. Barden, 413 West Main Street, Carbondale, Illinois. 17-3t

Wanted—A good all around tinner. Wages \$1.00 per hour, 9 hours per day. No union here. Married man preferred. Steady work. Sterling Sheet Metal and Roofing Company, Sterling, Colorado. 17-3t

Wanted at Once—Man capable of doing plumbing and other work along the hardware line, in a small town. A good place for the right man. Write to Kingston and Desmond, Mukwonago, Wisconsin. 16-3t

Wanted—Man capable of taking charge of tin and plumbing shop in town of one thousand population. Good wages and steady work for man who can make good. Ashby Hardware Company, Fairfield, Nebraska. 18-3t

Wanted—Good plumber and tinner, one who can do lead work and hot air furnace work. Steady job for competent man. Write stating wages expected and hours in first letter. Address Lock Box 156, Laurel, Nebraska. 16-3t

Wanted at Once—Two first-class sheet metal workers and furnace men. Must be good all around men. \$1.00 per hour and steady work. Union shop. Address Standard Sheet Metal Works, Corner Water and Genesee Street, Waukegan, Illinois. 18-3t

Wanted at Once—One good plumber; also with some knowledge of hot water and hot air heating. Married man preferred. Good town and schools. County seat, 3,000 population. State wages wanted in first letter. Edward Kelly, Carthage, Illinois. 17-3t

SITUATION WANTED

Wanted—A situation with a good furnace house as salesman. Have had 35 years' practical experience in the heating line. Address 59 Ford Street, Ogdensburg, New York City, N. Y. 18-3t

Situation Wanted—By first-class sheet metal worker, who can also do pipe fitting and plumbing, wants situation as maintenance man in hotel or factory. Can furnish own tools, complete shop equipment included. Address V-2336 West Monroe Street, Chicago, Illinois. 16-3t

Situation Wanted—By a first-class tinner. Understand all branches of the trade and can also do furnace heating and ventilation, lay out my patterns and work. Have had 12 years' experience. Am 32 years of age. Can take up new position at once. Address 603 Phelps Street, Peoria, Illinois. 17-3t

Situation Wanted — By experienced hardware clerk and salesman. Have had eight years' experience. Am thirty years old, married, and capable of taking entire charge of store. Address B-40, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 15-4t

Situation Wanted—As general foreman or superintendent of sheet metal shop. Am thoroughly experienced estimator in every branch of the business. Excellent executive abilities; first-class pattern cutter; exceptionally well qualified in the selling end of the business. 100% efficiency guaranteed. Please address B-45, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 16-3t

TINNERS' TOOLS

For Sale—Set tinner's tools, including brake. Address 718 Sycamore Street, Eureka, Kansas. 17-3t

Wanted—To buy tinner's tools. Send list of what you have and price. G. A. Dawson, Rolfe, Iowa. 16-3t

BOOKS.

Wanted—Men who know their trade from A to Z. That's the way the advertisements for Help Wanted start. You can learn more about your trade if you read good books on the subjects you are less familiar with. For a book covering the subject of Warm Air Heating thoroughly, you should read Snow's Furnace Heating, 234 pages. Price \$2.50. With AMERICAN ARTISAN one year (52 issues), \$3.85. Order your copy today from AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

Wanted—Warm Air Heater Installers to read PROGRESSIVE FURNACE HEATING. A practical manual of designing, estimating and installing modern systems for heating and ventilating buildings with warm air. Profusely illustrated. The whole range of the subject is concisely and fully covered. There is nothing highly technical in this book, no methods not easily comprehended and applied. Size, 6x9 inches, 280 pages, 189 illustrations. By Alfred G. King. Price, \$3.00. With AMERICAN ARTISAN one year (52 issues), \$4.25. Get a copy of this book now. Read it in your spare time and learn more about your important business. All books sent prepaid. No books exchanged. AMERICAN ARTISAN, 620 South Michigan Boulevard, Chicago, Illinois.

MAKE YOUR BUSINESS PAY by reading the book of that title. This book is a thorough treatise on the subject, written by one who has been in personal contact with contractors and business men throughout the country. It is a complete business guide written in plain language with information based on actual methods. This book contains 175 pages, is bound in cloth and measures 6x9 inches. Price, \$2.00. With AMERICAN ARTISAN one year (52 issues), \$3.35. A valuable book for any business man. Learn the methods used by the most successful men and apply them to your business. Now more than ever before business methods that are sound and sure should replace the haphazard. All books sent prepaid. No books exchanged. Address AMERICAN ARTISAN, 620 South Michigan Boulevard, Chicago, Illinois.